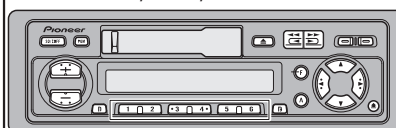


Service Manual

Pioneer

KEH-P2800/X1M/UC



ORDER NO.
CRT2268

MULTI-CD CONTROL HIGH POWER CASSETTE PLAYER WITH FM/AM TUNER

KEH-P2800

KEH-P3850

X1M/UC

X1M/ES

NOTE:

- See the separate manual CX-644(CRT1800) for the cassette mechanism description.
- The cassette mechanism assy employed in this model is one of 2M series.
- This service manual does not describe the CD test mode.

For the operations in the CD test mode, refer to the CD player's Service Manual.

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1. SAFETY INFORMATION

CAUTION

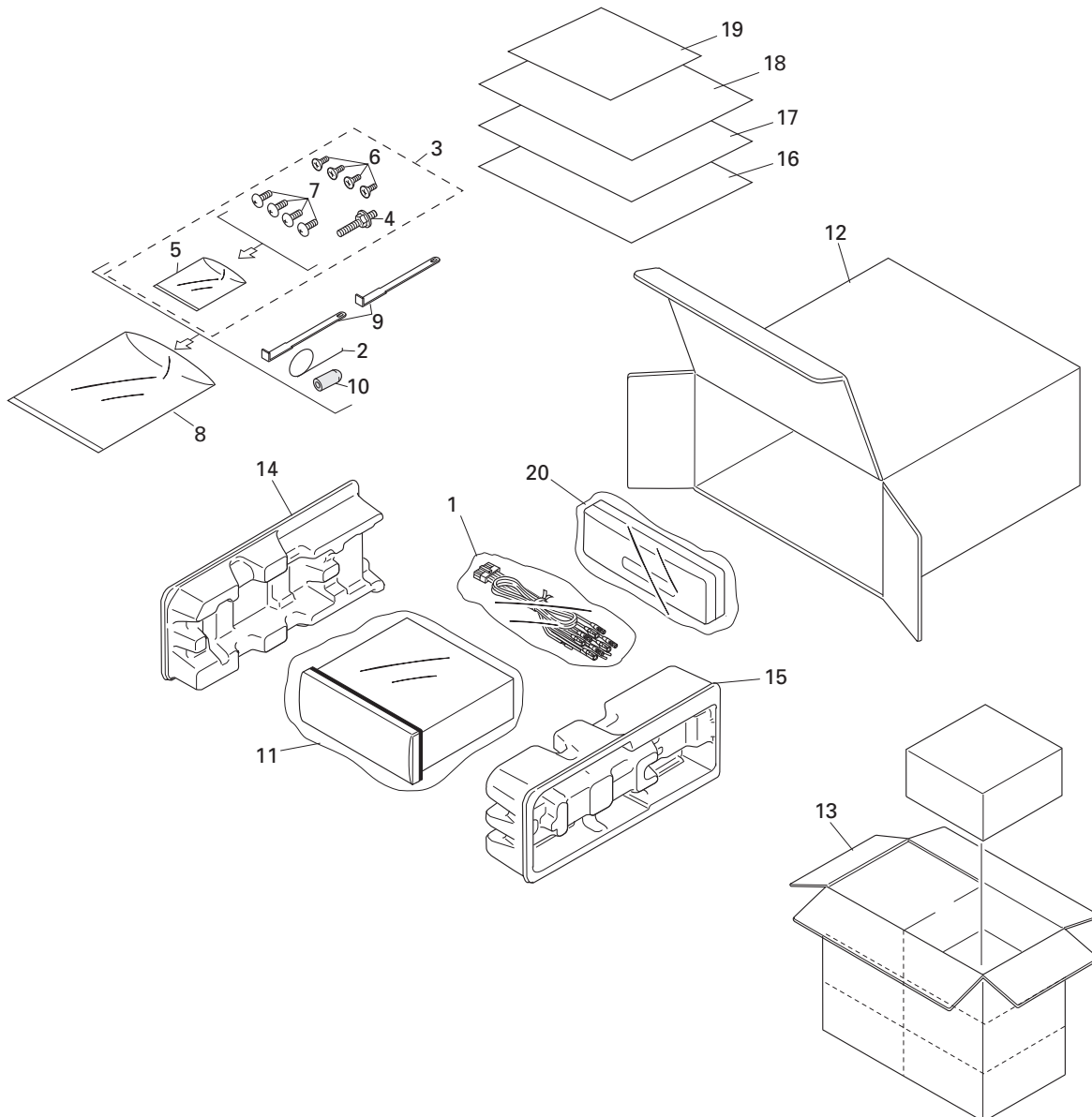
This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely; you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.
Health & Safety Code Section 25249.6 - Proposition 65

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING



NOTE:

- Parts marked by "*" are generally unavailable because they are not in our Master Spare Parts List.
- Screws adjacent to ∇ mark on the product are used for disassembly.

● PACKING SECTION PARTS LIST

Mark No.	Description	Part.No	
		KEH-P2800/X1M/UC	KEH-P3850/X1M/ES
	1 Cord Assy	CDE5805	CDE5805
	2 Spring	CBH1650	CBH1650
	3 Screw Assy	CEA2351	CEA2351
	4 Screw	CBA1304	CBA1304
*	5 Polyethylene Bag	CEG-127	CEG-127
	6 Screw(x4)	CRZ50P090FMC	CRZ50P090FMC
	7 Screw(x4)	TRZ50P080FMC	TRZ50P080FMC
*	8 Polyethylene Bag	CEG-158	CEG-158
	9 Handle(x2)	CNC5395	CNC5395
	10 Bush	CNV3930	CNV3930
	11 Polyethylene Bag	CEG1173	CEG-162
	12 Carton	CHG3598	CHG3599
	13 Contain Box	CHL3598	CHL3599
	14 Protector	CHP1622	CHP1622
	15 Protector	CHP1623	CHP1623
	16 Owner's Manual	CRD2804	CRD2801
	17 Owner's Manual	Not used	CRD2802
	18 Installation Manual	CRD2805	CRD2803
*	19 Card	ARY1048	Not used
	20 Case Assy	CXB3520	CXB3520

● Owner's Manual, Installation Manual

Model	Part No.	Language
KEH-P2800/X1M/UC	CRD2804	English,French,Spanish
	CRD2805	English,French,Spanish
KEH-P3850/X1M/ES	CRD2801	English,Spanish,Portuguese(B)
	CRD2802	Chinese,Arabic
	CRD2803	English,Spanish,Portuguese(B),Chinese,Arabic

This exploded view diagram illustrates the assembly of a car stereo unit. The components are numbered 1 through 73, and their assembly is indicated by dashed lines and arrows. Key parts include:

- Front Panel (68):** The top-most component, which houses the display and controls.
- Sticker (4):** A label that is applied to the front panel.
- Mounting Bracket (12):** A central component that supports the internal electronics.
- Internal Electronics (70):** The main circuit board containing the stereo's internal components.
- Antenna (71):** A component for receiving radio signals.
- Speaker (72):** A component for audio output.
- Control Panel (59):** A sub-assembly containing the volume knob and other controls.
- Display (58):** The digital display unit.
- Mounting Hardware (10, 9, 8, 7, 6, 5, 4):** Various screws, bolts, and brackets used to secure the unit.
- Antenna Cable (3):** A cable with a multi-pin connector for connecting the antenna.

The diagram shows the unit being assembled into a car's dashboard, with the front panel (68) being the final visible component.

(1) EXTERIOR SECTION PARTS LIST

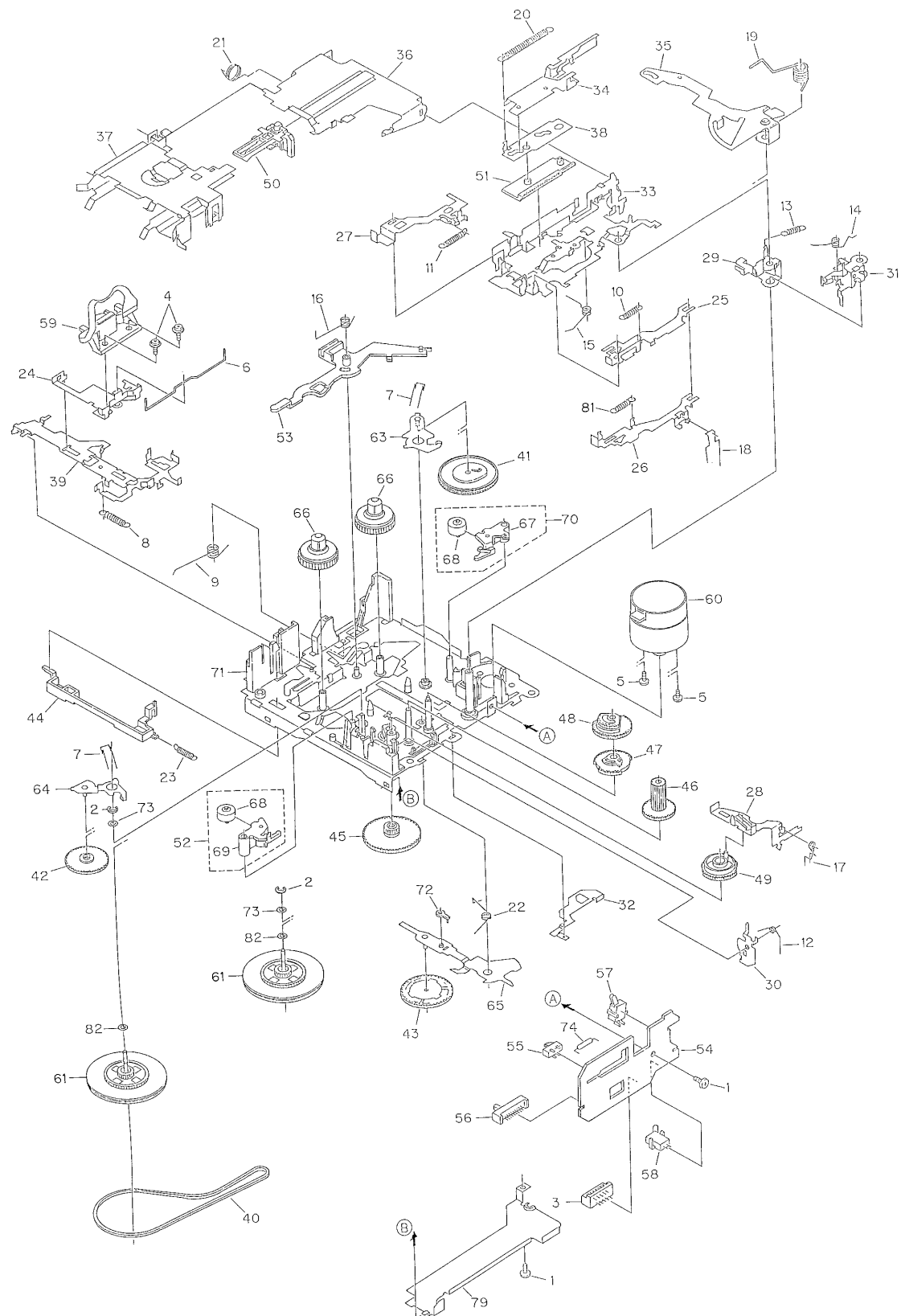
Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	BSZ26P050FMC	36	Bracket	CNC6135
2	Screw	BSZ30P100FMC	37	Bracket	CNC6791
3	Cord Assy	CDE5805	38	Arm	CNV4692
4	Case	CNB2481	39	Arm	CNV4693
5	Panel	CNS5214	40	Arm	CNV4728
6	Screw	BSZ30P055FUC	41	Panel Unit	CXB3715
7	Screw	BSZ30P060FMC	42	Door	CAT2028
8	Screw	BSZ30P100FMC	43	Spring	CBH1838
9	Holder	CNC5704	44	Screw	IMS20P030FZK
10	Cushion	CNM4870	45	Detach Grille Assy	See Contrast table(2)
11	Insulator	CNM5025	46	Screw	BPZ20P120FZK
12	Tuner Amp Unit	See Contrast table(2)	47	Button(Detachable)	CAC5868
13	Screw	BPZ26P080FMC	48	Button(Eject)	CAC5870
14	Screw	BSZ26P080FMC	49	Button(REW)	CAC5872
15	Screw	BSZ26P140FMC	50	Button(FF)	CAC5874
16	FM/AM Tuner Unit	See Contrast table(2)	51	Button(F,A,Cross)	CAC5876
17	Holder	CNC6554	52	Button(-,-)	CAC5878
18	Pin Jack(CN401)	CKB1035	53	Button(1-6,D,B)	CAC5880
19	Plug(CN601)	CKM1270	54	Button(+,-)	CAC5882
20	Connector(CN604)	CKS3362	55	Button(SO/OFF,PGM)	CAC5884
21	Connector(CN602)	CKS3408	56	Spring	CBH1836
22	Connector(CN603)	CKS3581	57	Spring	CBH2103
23	Antenna Jack(CN301)	CKX1056	58	Grille	See Contrast table(2)
24	Panel	CNB2245	59	Cover	CNS5209
25	Holder	CNC5399	60	Keyboard Unit	CWM6273
26	Holder	CNC6216	61	LCD(LCD901)	CAW1513
27	Heat Sink	CNC6217	62	Connector(CN901)	CKS3580
28	Holder	CNC6531	63	Holder	CNC8054
29	Holder	CNC6845	64	Connector	CNV5586
30	Chassis Unit	CXA9851	65	Rubber	CNV5587
31	Holder Unit	CXB2687	66	Holder	CNV5589
32	Button	CAC4836	67	Lighting Conductor	CNV5752
33	Spring	CBH1834	68	Case Assy	CXB3520
34	Spring	CBH1835	69	Transistor(Q804)	2SD2396
35	Spring	CBH1996	70	Cassette Mechanism Assy	EXK3450
			71	Fuse(FU951)(10A)	CEK1136
			72	IC(IC501)	TDA7384
			* 73	Cord	See Contrast table(2)

(2) CONTRAST TABLE

KEH-P2800/X1M/UC and KEH-P3850/X1M/ES are constructed the same except for the following:

Mark No.	Description	Part No.	
		KEH-P2800/X1M/UC	KEH-P3850/X1M/ES
12	Tuner Amp Unit	CWM6276	CWM6349
16	FM/AM Tuner Unit	CWE1467	CWE1486
45	Detach Grille Assy	CXB3369	CXB3375
58	Grille	CNS5200	CNS5201
* 73	Cord	CDC1043	Not used

2.3 CASSETTE MECHANISM ASSY



● CASSETTE MECHANISM ASSY SECTION PARTS LIST

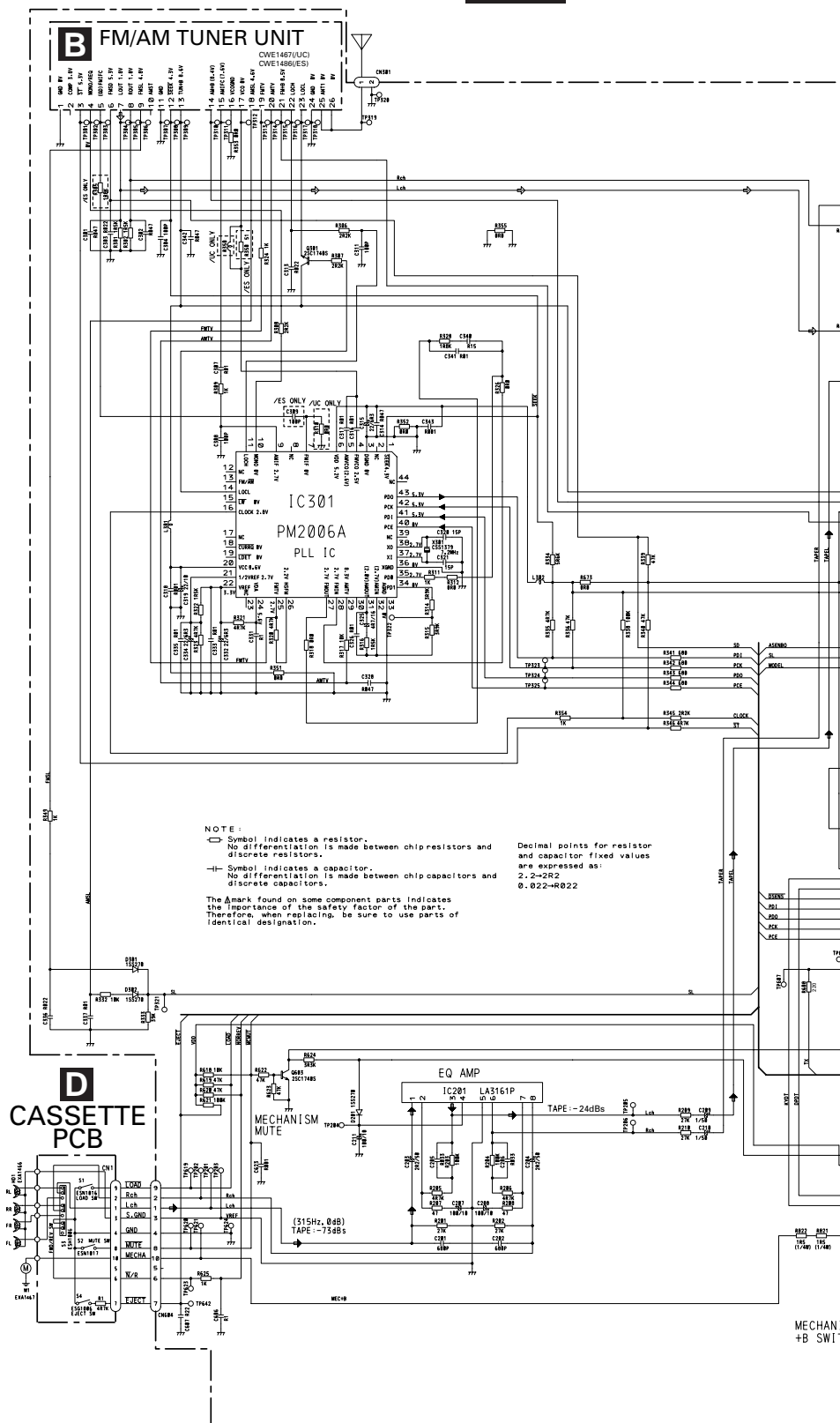
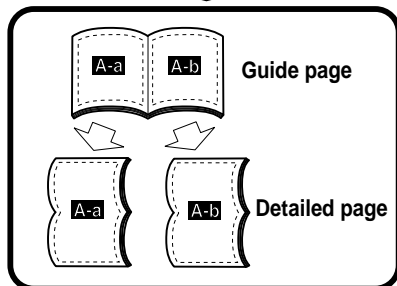
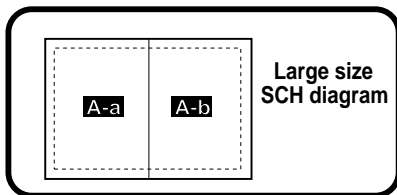
Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	BSZ23P050FMC	46	Gear	ENV1475
2	Washer	CBG1003	47	Gear	ENV1512
3	Connector(CN1)	CKS2829	48	Gear	ENV1513
4	Screw(M2x5)	EBA1038	49	Gear	ENV1502
5	Screw(M2x2.5)	EBA1037	50	Lever	ENV1480
6	Spring	EBH1554	51	Lever	ENV1487
7	Spring	EBH1555	52	Pinch Holder Unit	EXA1516
8	Spring	EBH1556	53	Arm	ENV1519
9	Spring	EBH1603	* 54	PCB	ENP1161
10	Spring	EBH1591	55	Switch(Eject)(S4)	ESG1006
11	Spring	EBH1559	56	Switch(FWD)(REV)(S3)	ESH1006
12	Spring	EBH1593	57	Switch(Load)(S1)	ESN1016
13	Spring	EBH1561	58	Switch(Mute)(S2)	ESN1017
14	Spring	EBH1562	59	Head Assy(HD1)	EXA1466
15	Spring	EBH1563	60	Motor Unit(M1)	EXA1467
16	Spring	EBH1590	61	Flywheel Unit	EXA1547
17	Spring	EBH1565	62	.....
18	Spring	EBH1566	63	Arm Unit	EXA1447
19	Spring	EBH1567	64	Arm Unit	EXA1448
20	Spring	EBH1568	65	Arm Unit	EXA1550
21	Spring	EBH1569	66	Reel Unit	EXA1450
22	Spring	EBH1571	67	Pinch Holder	ENV1466
23	Spring	EBH1579	68	Pinch Roller	ENV1518
24	Head Base	ENC1475	69	Pinch Holder	ENV1467
25	Lever	ENC1429	70	Pinch Holder Unit	EXA1515
26	Lever	ENC1430	71	Chassis Unit	EXA1498
27	Lever	ENC1431	72	Arm	ENV1524
28	Lever	ENC1432	73	Washer	CBF-167
29	Arm	ENC1433	74	Resistor(R1)	RD1/4HM472J
30	Arm	ENC1434	75-78	.....
31	Arm	ENC1480	79	Cover	ENC1452
32	Arm	ENC1476	80	.....
33	Bracket	ENC1512	81	Spring	EBH1592
34	Lever	ENC1523	82	Washer	CBF1051
35	Arm	ENC1524			
36	Frame	ENC1440			
37	Holder	ENC1441			
38	Lever	ENC1446			
39	Lever	ENC1478			
40	Belt	ENT1027			
41	Gear	ENV1504			
42	Gear	ENV1470			
43	Gear	ENV1517			
44	Lever	ENV1472			
45	Gear	ENV1510			

3. SCHEMATIC DIAGRAM

3.1 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

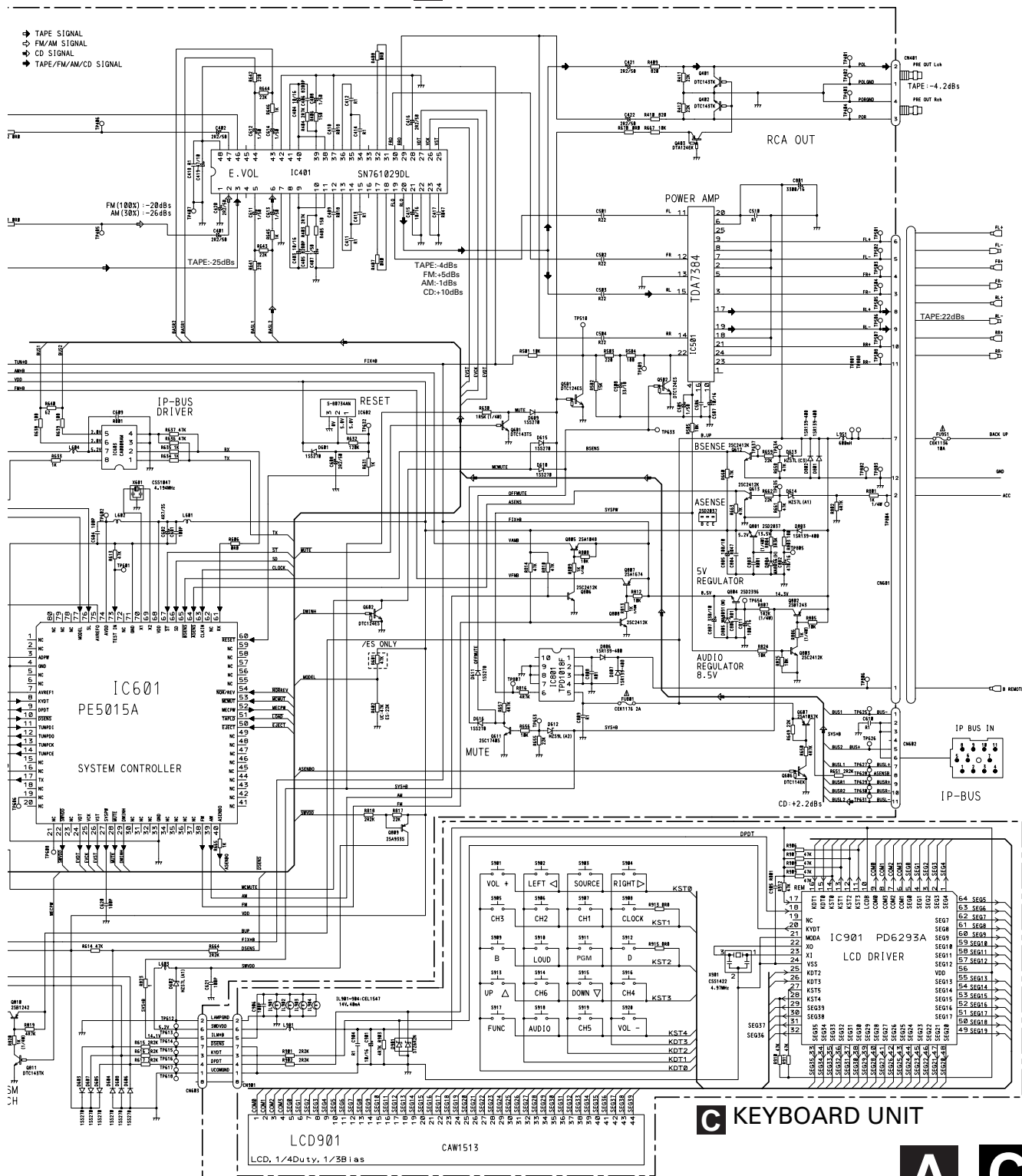
Note: When ordering service parts, be sure to refer to “EXPLODED VIEWS AND PARTS LIST” or “ELECTRICAL PARTS LIST”.

A-a



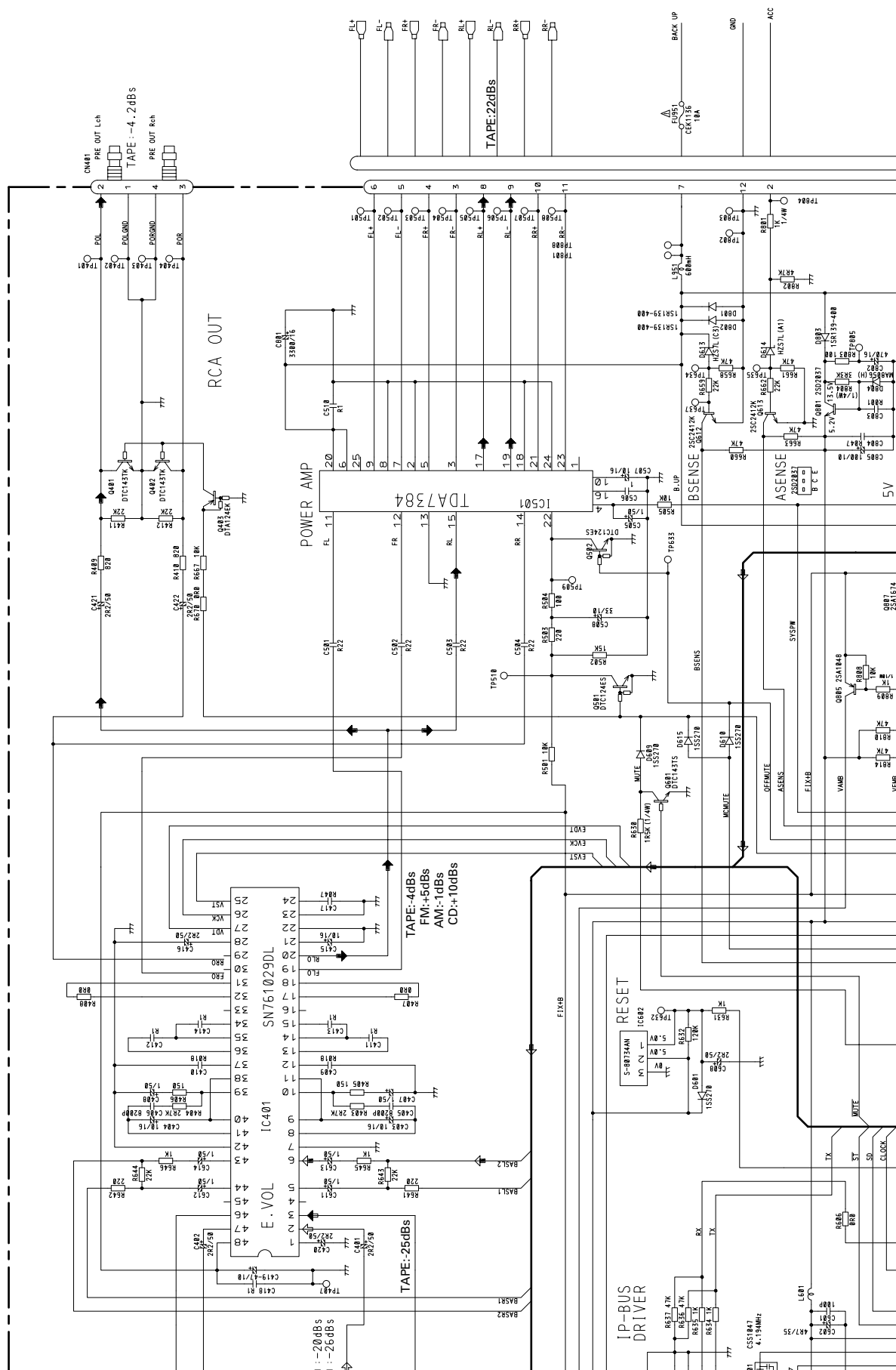
A-b

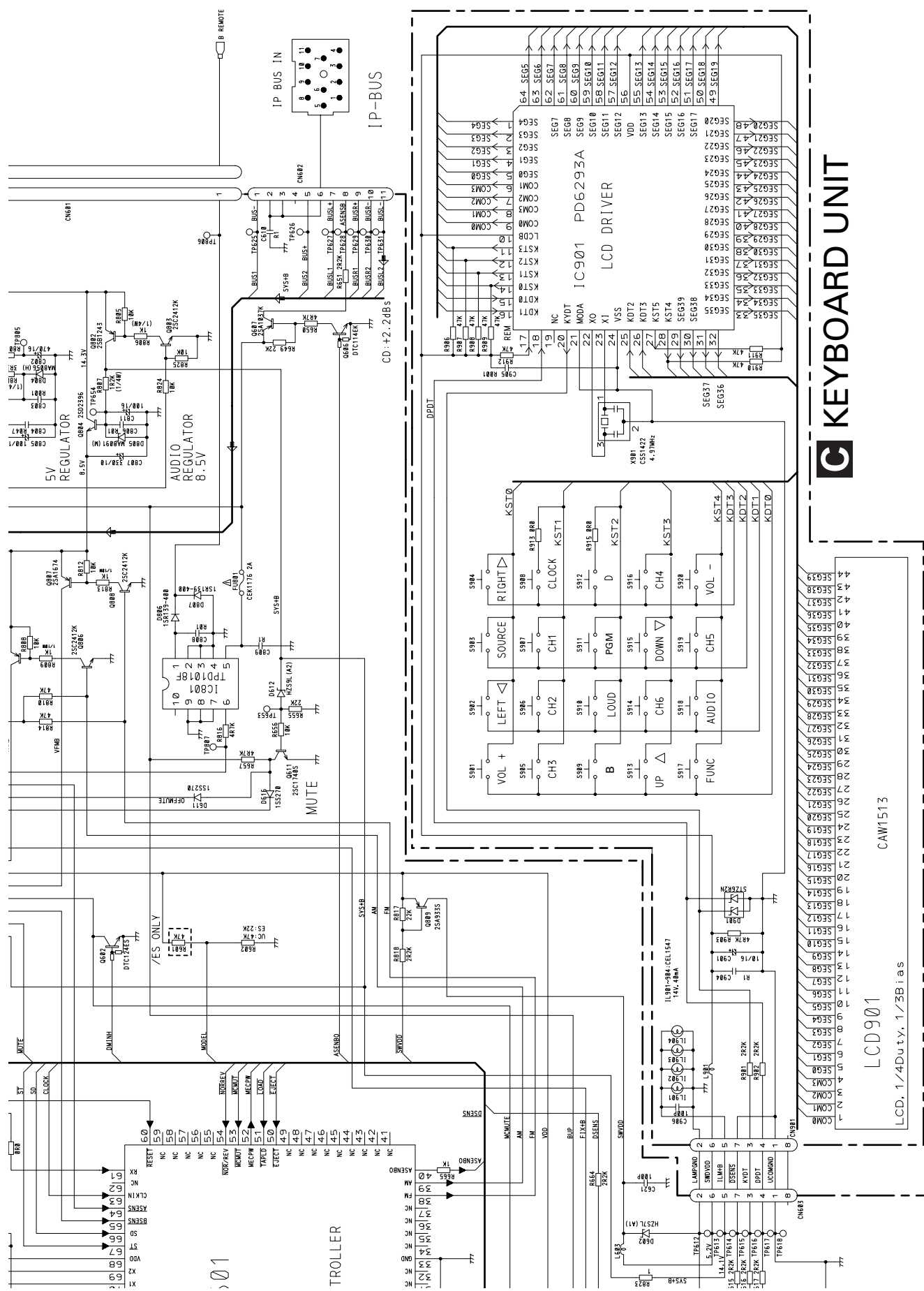
A TUNER AMP UNIT



A-a A-b

A TUNER AMP UNIT





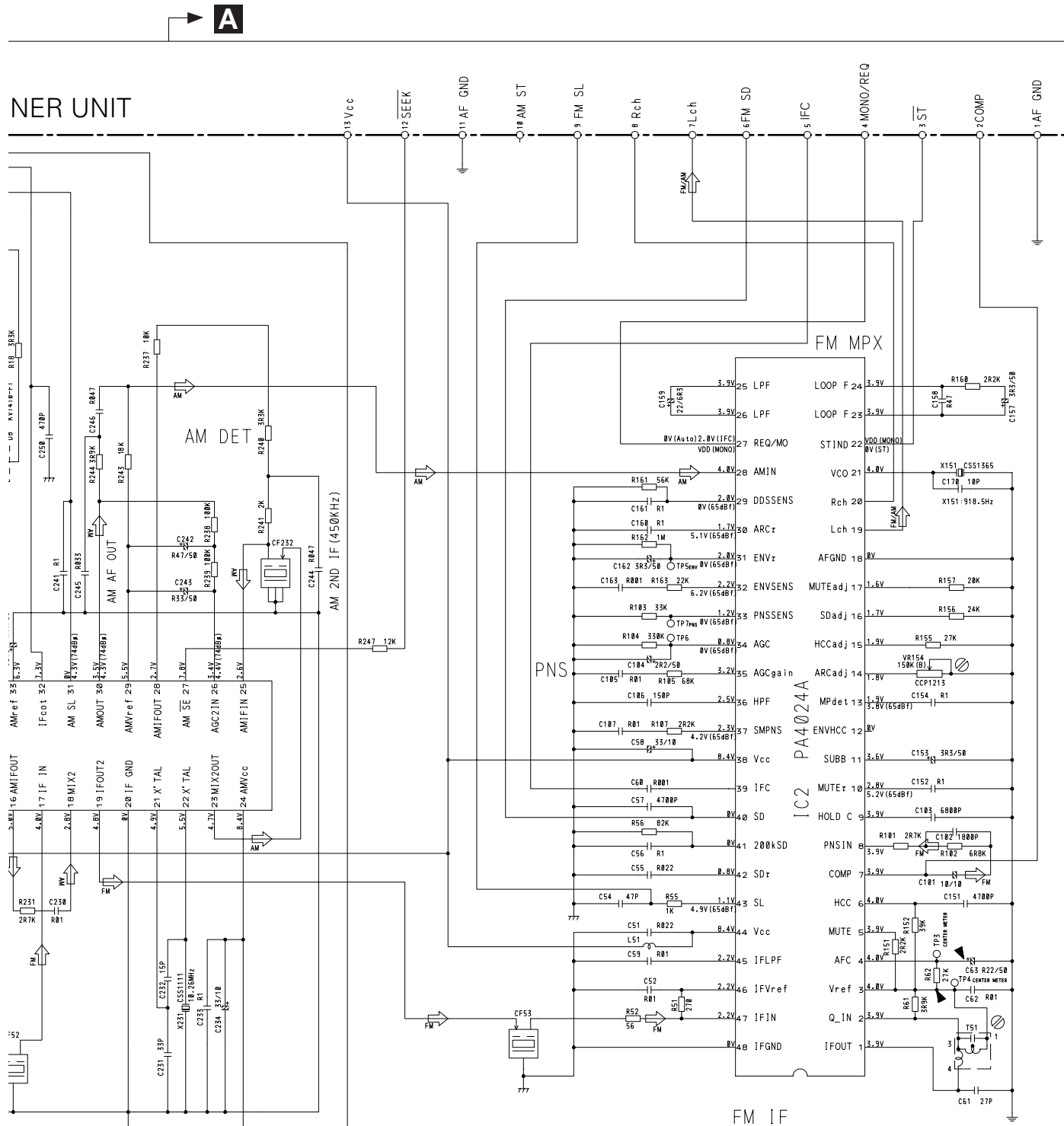
A-a A-b

A

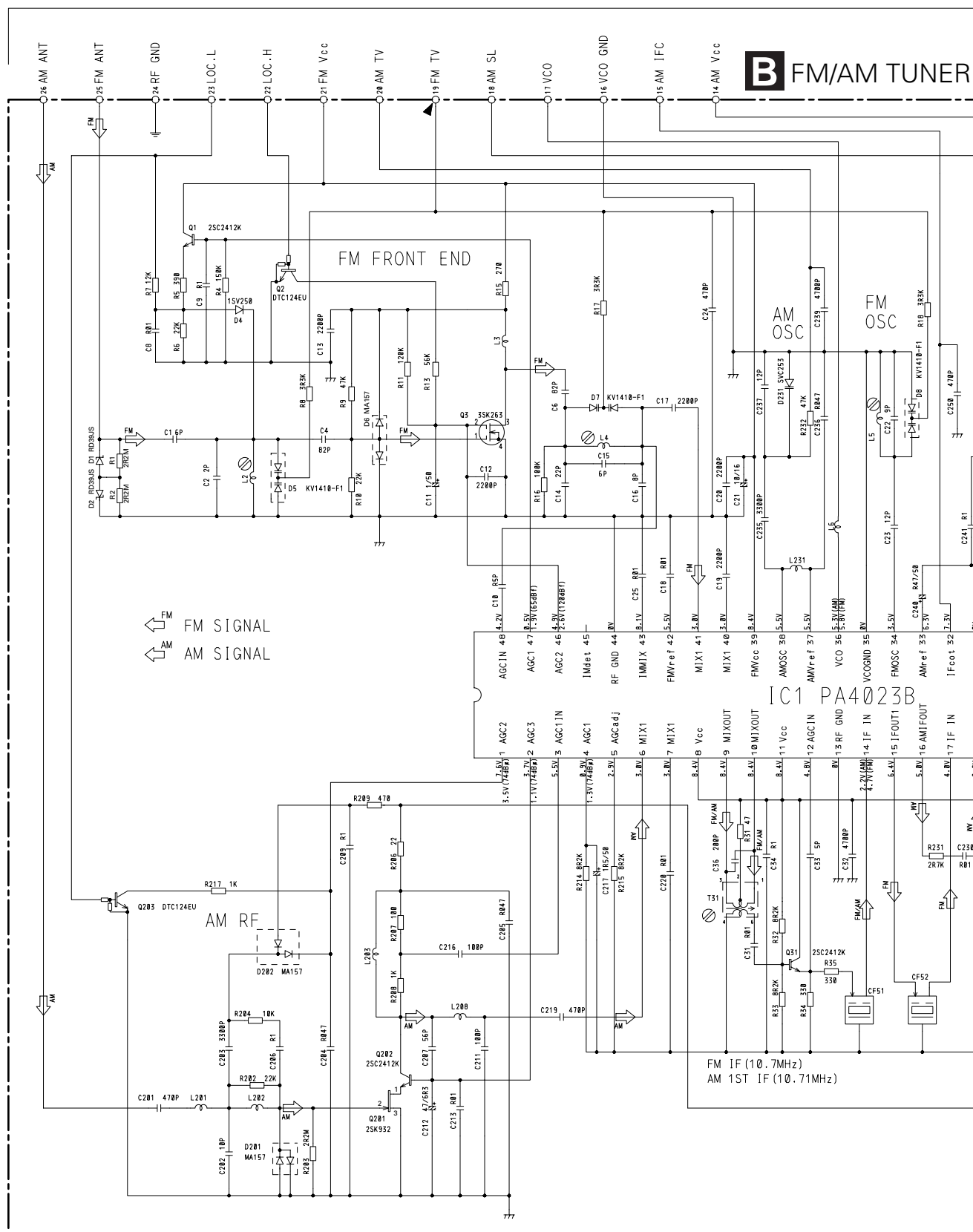
B

C

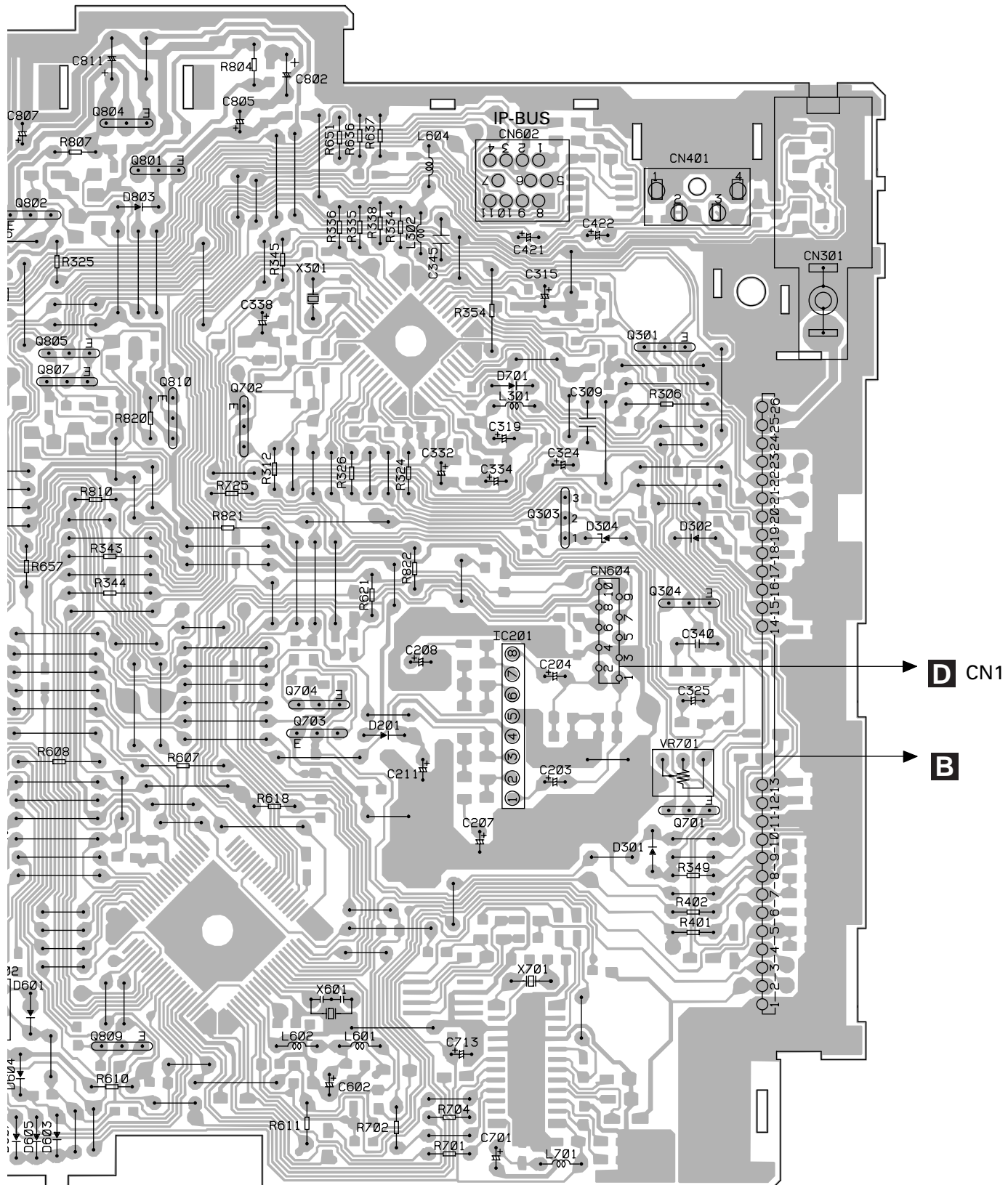
D



● CWE1486 (KEH-P3850/X1M/ES)



SIDE A

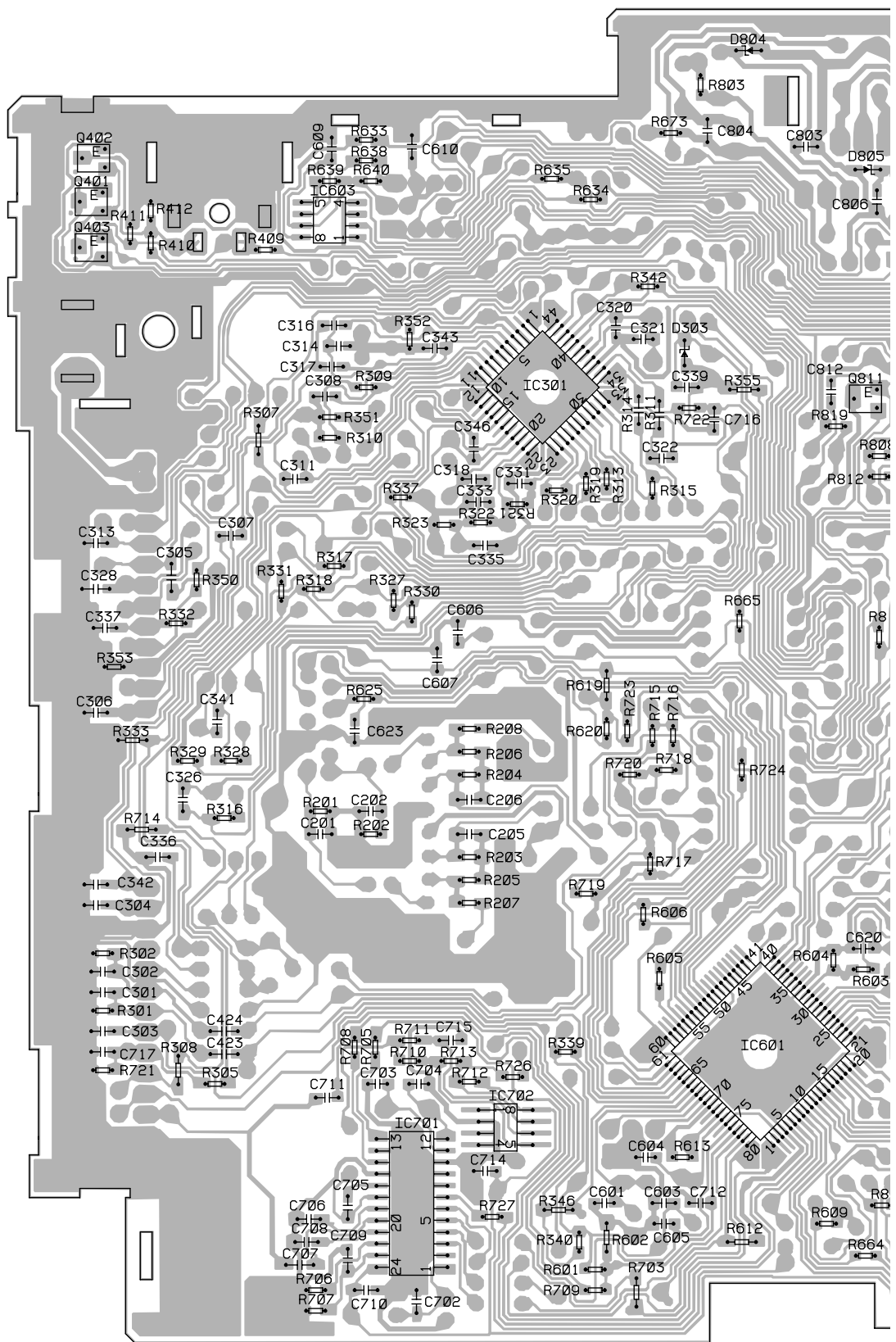


D CN1

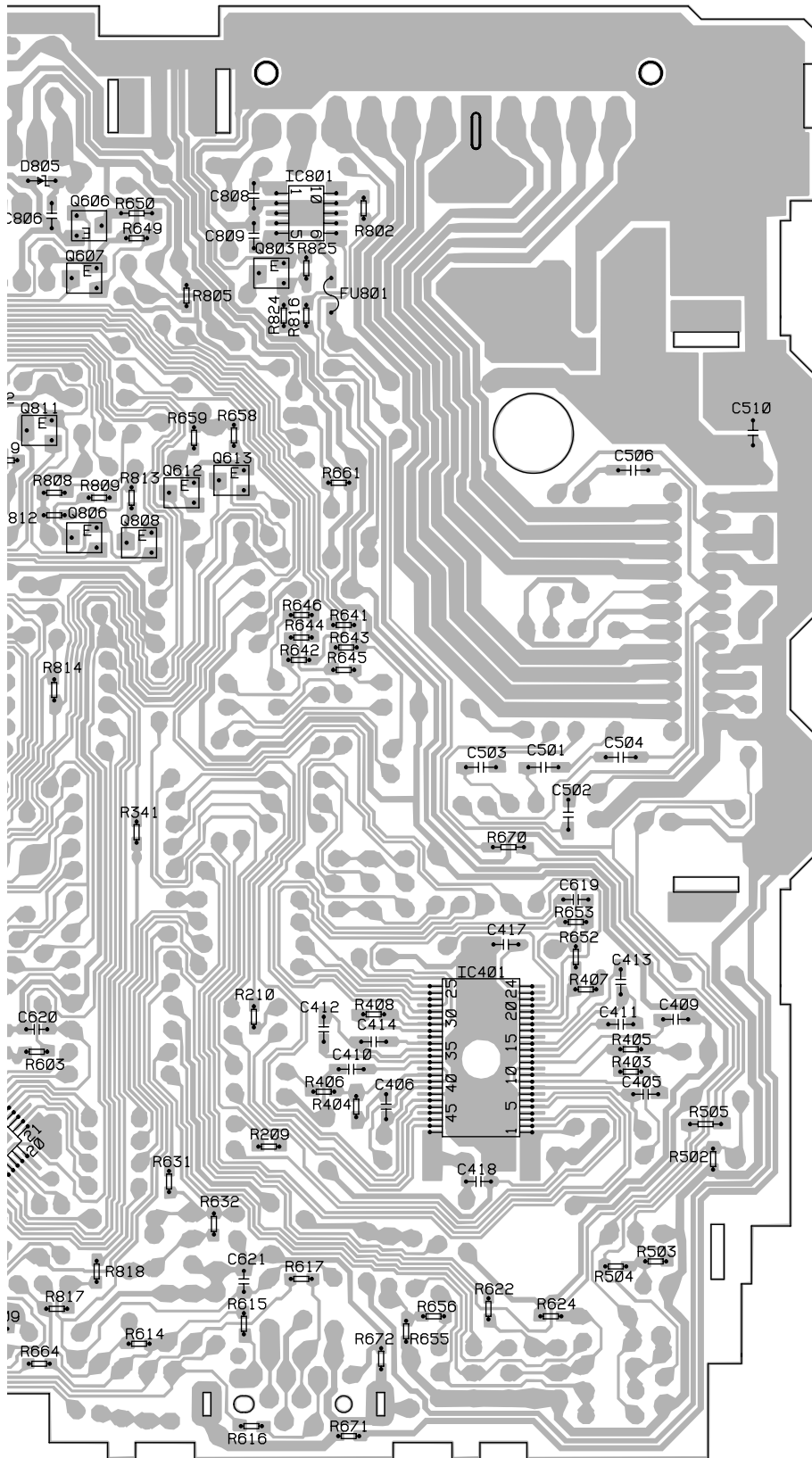
B

A

A TUNER AMP UNIT



SIDE B



IC, Q

Q402

IC801 Q606
Q401 IC603Q403
Q607 Q803Q811
IC301Q613
Q612

Q806 Q808

IC401

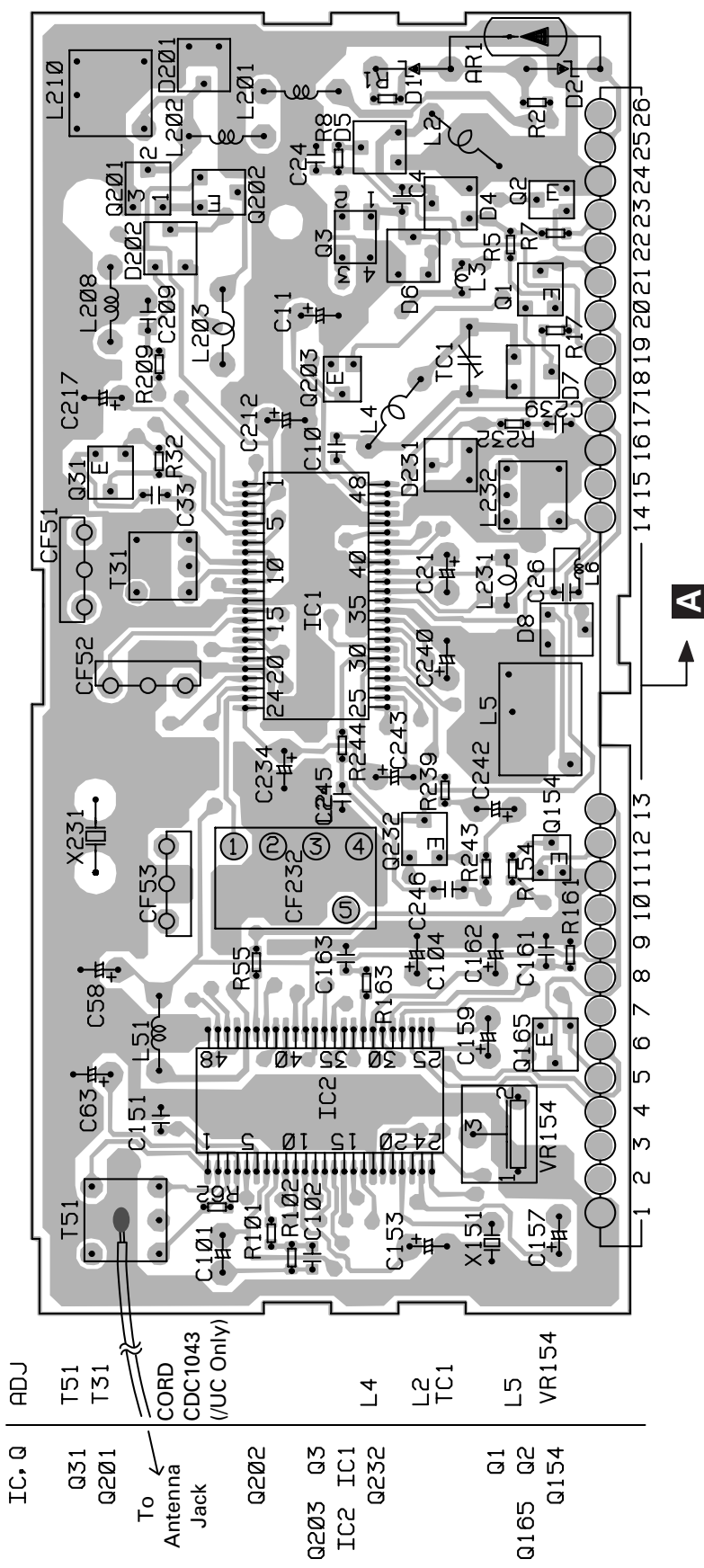
IC601

IC702
IC701

4.2 FM/AM TUNER UNIT

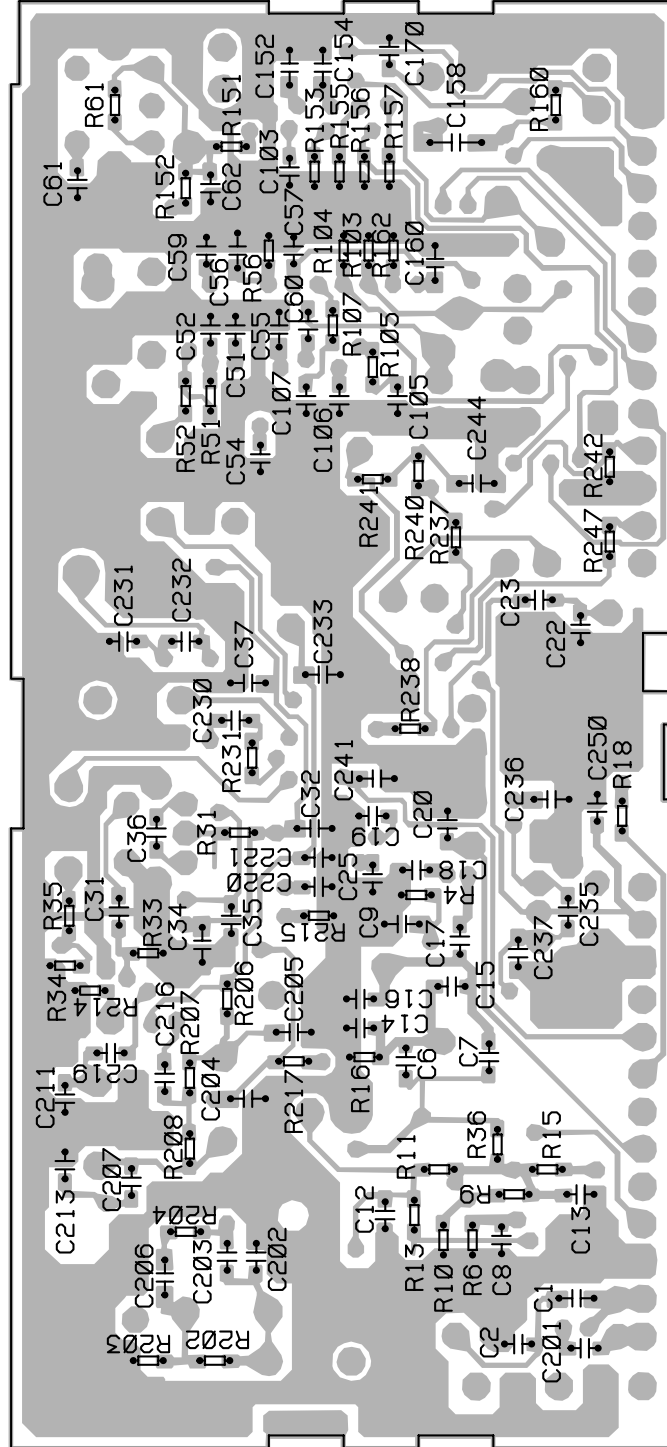
B

FM/AM TUNER UNIT



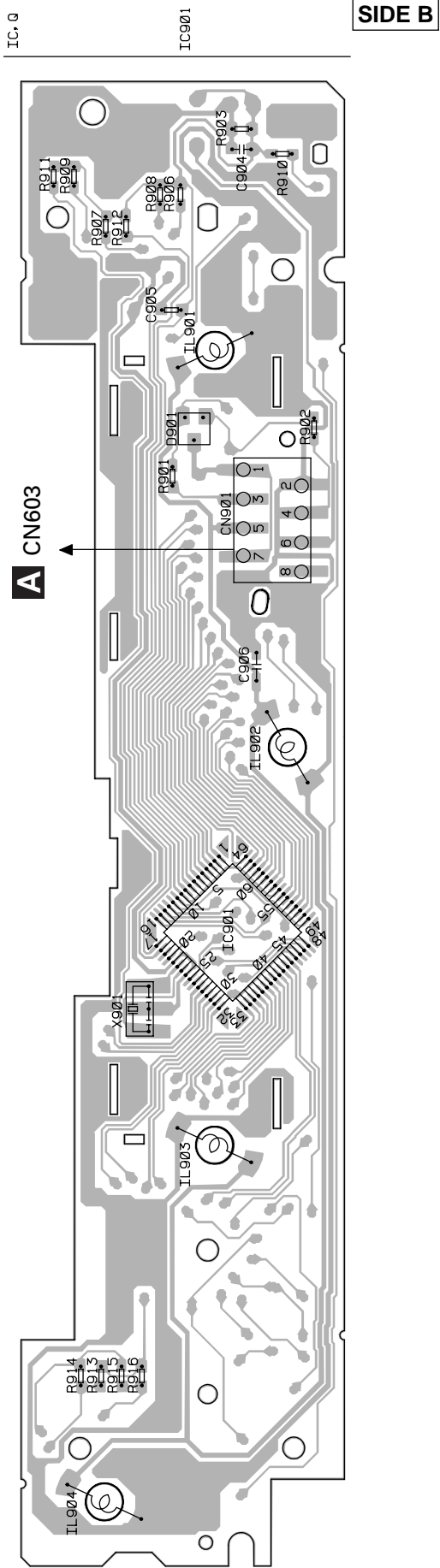
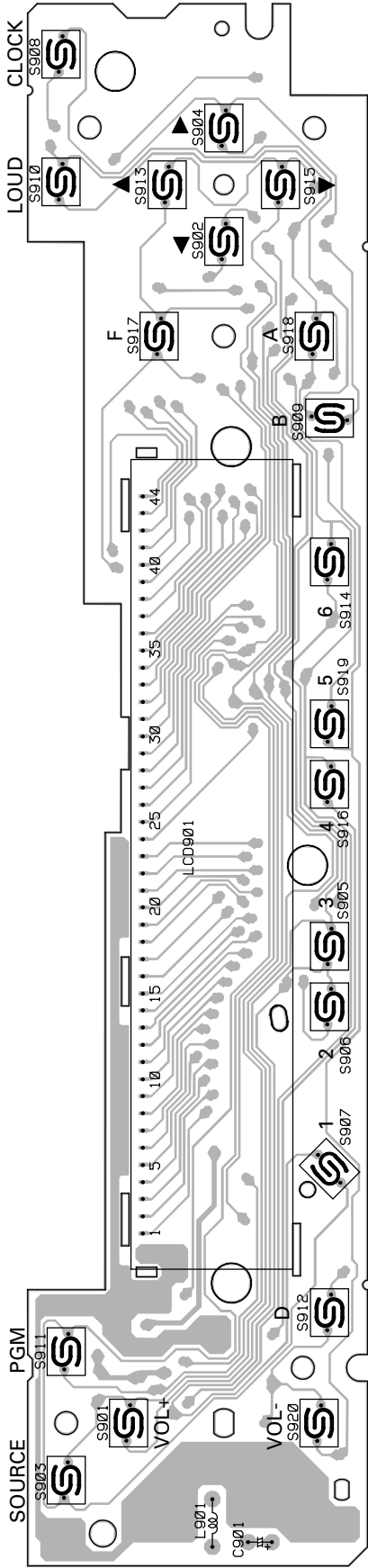
SIDE A

SIDE B



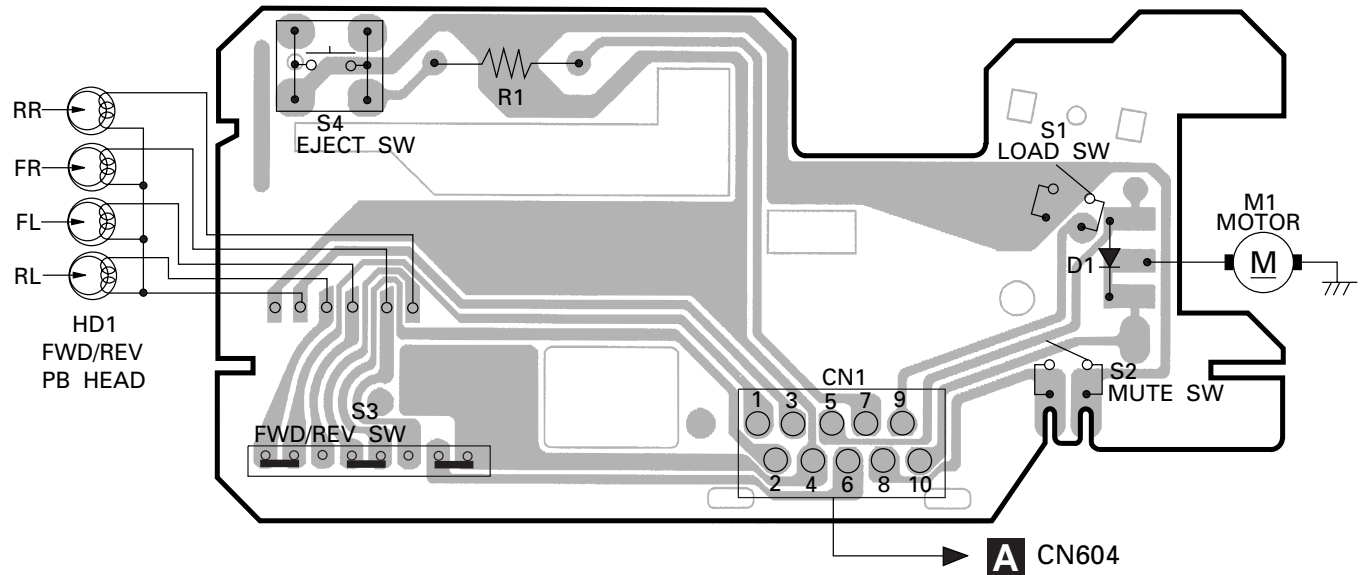
4.3 KEYBOARD UNIT

SIDE A



4.4 CASSETTE MECHANISM ASSY

D CASSETTE PCB



5. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/○S○○○○J,RS1/○○S○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
A Unit Number : CWM6276 (KEH-P2800/X1M/UC)		D 615 Diode	1SS270
	Unit Number : CWM6349 (KEH-P3850/X1M/ES)	D 616 Diode	1SS270
	Unit Name : Tuner Amp Unit	D 801 Diode	1SR139-400
MISCELLANEOUS		D 802 Diode	1SR139-400
IC 201 IC	LA3161P	D 803 Diode	1SR139-400
IC 301 IC	PM2006A	D 804 Diode	MA8056(H)
IC 401 IC	SN761029DL	D 805 Diode	MA8091(M)
IC 501 IC	TDA7384	D 806 Diode	1SR139-400
IC 601 IC	PE5015A	D 807 Diode	1SR139-400
		L 301 Ferri-Inductor	LAU101K
IC 602 IC	S-80734AN	L 302 Ferri-Inductor	LAU2R2K
IC 603 IC	CA0008AM	L 601 Ferri-Inductor	LAU101K
IC 801 IC	TPD1018F	L 602 Ferri-Inductor	LAU101K
Q 301 Transistor	2SC1740S	L 603 Ferri-Inductor	LAU101K
Q 401 Transistor	DTC143TK	L 604 Ferri-Inductor	LAU2R2K
		L 951 Choke Coil 600mH	CTH1168
Q 402 Transistor	DTC143TK	X 301 Crystal Resonator 7.200MHz	CSS1379
Q 403 Transistor	DTA124EK	X 601 Ceramic Resonator 4.194MHz	CSS1047
Q 501 Transistor	DTC124ES	FU 801 Fuse 2A	CEK1176
Q 502 Transistor	DTC124ES	FM/AM TunerUnit (KEH-P2800/X1M/UC)CWE1467	
Q 601 Transistor	DTC143TS	FM/AM TunerUnit (KEH-P3850/X1M/ES)CWE1486	
		RESISTORS	
Q 602 Transistor	DTC124ES	R 201	RS1/10S273J
Q 603 Transistor	2SC1740S	R 202	RS1/10S273J
Q 606 Transistor	DTC114EK	R 203	RS1/10S104J
Q 607 Transistor	2SA1037K	R 204	RS1/10S104J
Q 611 Transistor	2SC1740S	R 205	RS1/10S472J
		R 206	RS1/10S472J
Q 612 Transistor	2SC2412K	R 207	RS1/10S470J
Q 613 Transistor	2SC2412K	R 208	RS1/10S470J
Q 801 Transistor	2SD2037	R 209	RS1/10S273J
Q 802 Transistor	2SB1243	R 210	RS1/10S273J
Q 803 Transistor	2SC2412K	R 301	RS1/10S152J
		R 302	RS1/10S152J
Q 804 Transistor	2SD2396	R 305 (KEH-P3850/X1M/ES)	RS1/10S182J
Q 805 Transistor	2SA1048	R 306	RD1/4PU222J
Q 806 Transistor	2SC2412K	R 307	RS1/8S222J
Q 807 Transistor	2SA1674	R 308	RS1/8S222J
Q 808 Transistor	2SC2412K	R 309	RS1/10S102J
Q 809 Transistor	2SA933S	R 310 (KEH-P2800/X1M/UC)	RS1/10S0R0J
Q 810 Transistor	2SB1242	R 311	RS1/8S102J
Q 811 Transistor	DTC143TK	R 312	RD1/4PU0R0J
D 201 Diode	1SS270	R 314	RS1/8S392J
D 301 Diode	1SS270	R 315	RS1/10S392J
		R 316	RS1/10S152J
D 302 Diode	1SS270	R 317	RS1/10S103J
D 601 Diode	1SS270	R 318	RS1/10S0R0J
D 602 Diode	HZS7L(A1)	R 320	RS1/10S472J
D 603 Diode	1SS270	R 321	RS1/10S472J
D 604 Diode	1SS270	R 322	RS1/10S152J
		R 323	RS1/10S472J
D 605 Diode	1SS270	R 324	RD1/4PU102J
D 606 Diode	1SS270		
D 607 Diode	1SS270		
D 608 Diode	1SS270		
D 609 Diode	1SS270		
D 610 Diode	1SS270		
D 611 Diode	1SS270		
D 612 Diode	HZS9L(A2)		
D 613 Diode	HZS7L(C3)		
D 614 Diode	HZS7L(A1)		

====Circuit Symbol and No.==Part Name	Part No.	====Circuit Symbol and No.==Part Name	Part No.
R 326	RD1/4PU0R0J	R 636	RD1/4PU473J
R 328	RS1/10S182J	R 637	RD1/4PU473J
R 332	RS1/10S103J	R 638	RS1/10S101J
R 333	RS1/8S393J	R 639	RS1/10S101J
R 334	RD1/4PU562J	R 640	RS1/10S620J
R 335	RD1/4PU472J	R 641	RS1/10S221J
R 336	RD1/4PU473J	R 642	RS1/10S221J
R 338	RD1/4PU104J	R 643	RS1/10S223J
R 339	RS1/10S473J	R 644	RS1/10S223J
R 340	RS1/10S473J	R 645	RS1/10S102J
R 341	RS1/10S681J	R 646	RS1/10S102J
R 342	RS1/10S681J	R 649	RS1/10S223J
R 343	RD1/4PU681J	R 650	RS1/8S472J
R 344	RD1/4PU681J	R 651	RD1/4PU222J
R 345	RD1/4PU222J	R 655	RS1/10S223J
R 346	RS1/8S472J	R 656	RS1/10S103J
R 349	RD1/4PU102J	R 657	RD1/4PU472J
R 350 (KEH-P2800/X1M/UC) (KEH-P3850/X1M/ES)	LCTBR39K2125	R 658	RS1/10S473J
R 351	RS1/10S510J	R 659	RS1/10S223J
	RS1/10S0R0J	R 660	RD1/4PU473J
R 352	RS1/10S0R0J	R 661	RS1/10S473J
R 353	RS1/10S0R0J	R 662	RD1/4PU223J
R 354	RD1/4PU102J	R 663	RD1/4PU473J
R 355	RS1/8S0R0J	R 664	RS1/10S222J
R 401	RD1/4PU0R0J	R 665	RS1/10S102J
R 402	RD1/4PU0R0J	R 667	RD1/4PU103J
R 403	RS1/10S272J	R 670	RS1/8S0R0J
R 404	RS1/10S272J	R 673	RS1/10S0R0J
R 405	RS1/10S151J	R 801	RD1/4PU102J
R 406	RS1/10S151J	R 802	RS1/10S472J
R 407	RS1/10S0R0J	R 803	RS1/10S101J
R 408	RS1/10S0R0J	R 804	RD1/4PU332J
R 409	RS1/10S821J	R 805	RS1/10S103J
R 410	RS1/10S821J	R 806	RD1/4PU102J
R 411	RS1/10S223J	R 807	RD1/4PU122J
R 412	RS1/10S223J	R 808	RS1/10S103J
R 501	RD1/4PU103J	R 809	RS1/10S102J
R 502	RS1/10S153J	R 810	RD1/4PU473J
R 503	RS1/10S221J	R 812	RS1/10S103J
R 504	RS1/10S101J	R 813	RS1/10S102J
R 505	RS1/8S103J	R 814	RS1/10S473J
R 601 (KEH-P3850/X1M/ES)	RS1/10S473J	R 816	RS1/10S472J
R 602 (KEH-P2800/X1M/UC) (KEH-P3850/X1M/ES)	RS1/8S473J	R 817	RS1/10S223J
R 606	RS1/8S223J	R 818	RS1/10S222J
	RS1/10S0R0J	R 819	RS1/10S472J
R 608	RD1/4PU221J	R 820	RD1/4PU102J
R 613	RS1/10S473J	R 821	RD1/4PU1R5J
R 614	RS1/10S473J	R 822	RD1/4PU1R5J
R 615	RS1/10S222J	R 823	RD1/4PU1R0J
R 616	RS1/10S222J	R 824	RS1/10S103J
R 617	RS1/10S222J	R 825	RS1/10S103J
R 618	RD1/4PU103J	CAPACITORS	
R 619	RS1/8S473J	C 201	CKSQYB681K50
R 620	RS1/10S473J	C 202	CKSQYB681K50
R 621	RD1/4PU104J	C 203	CEJA2R2M50
R 622	RS1/10S473J	C 204	CEJA2R2M50
R 623	RD1/4PU473J	C 205	CKSQYB333K50
R 624	RS1/10S332J		
R 625	RS1/10S102J	C 206	CKSQYB333K50
R 630	RD1/4PU152J	C 207	CEJA101M10
R 631	RS1/10S102J	C 208	CEJA101M10
R 632	RS1/10S124J	C 209	CEJA1R0M50
R 633	RS1/10S102J	C 210	CEJA1R0M50
R 634	RS1/10S102J		
R 635	RS1/10S102J	C 211	CEJA101M10
		C 301	CKSQYB473K50
		C 302	CKSQYB473K50
		C 303	CKSQYB223K50
		C 304	CCSQCH101J50

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
C 307	CKSQYB103K50	C 610	CKSQYB104K16
C 308	CCSQCH101J50	C 611	CEJA1R0M50
C 309 (KEH-P3850/X1M/ES)	CKPUYY103M16	C 612	CEJA1R0M50
C 311	CCSQCH101J50	C 613	CEJA1R0M50
C 313	CKSQYB223K50	C 614	CEJA1R0M50
C 314	CKSQYB473K50	C 620	CCSQCH101J50
C 315	CEJA220M6R3	C 621	CCSQCH101J50
C 316	CKSQYB103K50	C 623	CKSQYB102K50
C 317	CKSQYB103K50	C 801 3300μF/16V	CCH1018
C 318	CKSQYB102K50	C 802 470μF/16V	CCH1183
C 319	CEJA220M10	C 803	CKSQYB102K50
C 320	CCSQCH150J50	C 804	CKSQYB473K50
C 321	CCSQCH150J50	C 805	CEJA101M10
C 325 4.7μF/16V	CCH1250	C 806	CKSQYB103K50
C 326	CKSQYB103K50	C 807 330μF/10V	CCH1181
C 328	CKLSR473K16	C 808	CKSQYB103K50
C 331	CKSQYB104K16	C 809	CKSQYB104K16
C 332	CEJA220M6R3	C 811 100μF/16V	CCH1179
C 333	CKSQYB103K50		
C 334	CEJA220M6R3		
C 335	CKSQYB103K50		
C 336	CKSQYB223K50		
C 337	CKSQYB103K50		
C 340	CFTLA154J50		
C 341	CKSQYB103K50		
C 342	CKSQYB473K50		
C 343	CKSQYB102K50		
C 401	CEJA2R2M50		
C 402	CEJA2R2M50		
C 403	CEJA100M16		
C 404	CEJA100M16		
C 405	CKSQYB822K50		
C 406	CKSQYB822K50		
C 407	CEJA1R0M50		
C 408	CEJA1R0M50		
C 409	CKSQYB183K50		
C 410	CKSQYB183K50		
C 411	CKSQYB104K16		
C 412	CKSQYB104K16		
C 413	CKSQYB104K16		
C 414	CKSQYB104K16		
C 415	CEJA100M16		
C 416	CEJA2R2M50		
C 417	CKSQYB473K50		
C 418	CKSQYB104K16		
C 419	CEJA470M10		
C 420	CEJA2R2M50		
C 421	CEJA2R2M50		
C 422	CEJA2R2M50		
C 501	CKSYB224K16		
C 502	CKSYB224K16		
C 503	CKSYB224K16		
C 504	CKSYB224K16		
C 505	CEJA1R0M50		
C 506	CKSYB105K16		
C 507	CEJA100M16		
C 508	CEJA330M10		
C 510	CKSQYB104K16		
C 601	CCSQCH101J50		
C 602	CEJA4R7M35		
C 604	CCSQCH101J50		
C 606	CKSQYB104K16		
C 607	CKSQYB224K16		
C 608	CEJA2R2M50		
C 609	CKSQYB102K50		

C Unit Number : CWM6273
Unit Name : Keyboard Unit

MISCELLANEOUS

IC 901	IC	PD6293A
D 901	Diode	STZ6R2N
L 901	Ferri-Inductor	LAU101K
X 901	Ceramic Resonator 4.97MHz	CSS1422
IL 901	Lamp 14V 40mA	CEL1547
IL 902	Lamp 14V 40mA	CEL1547
IL 903	Lamp 14V 40mA	CEL1547
IL 904	Lamp 14V 40mA	CEL1547
LCD 901	LCD	CAW1513

RESISTORS

R 901	RS1/10S222J
R 902	RS1/10S222J
R 903	RS1/10S472J
R 906	RS1/10S473J
R 907	RS1/10S473J
R 908	RS1/10S473J
R 909	RS1/10S473J
R 910	RS1/10S473J
R 911	RS1/10S473J
R 912	RS1/10S473J
R 913	RS1/10S0R0J
R 915	RS1/10S0R0J

CAPACITORS

C 901	CEAL100M16
C 904	CKSQYB104K16
C 905	CKSQYB102K50
C 906	CCSCH101J50

B Unit Number : CWE1467 (KEH-P2800/X1M/UC)
Unit Name : FM/AM Tuner Unit

MISCELLANEOUS

IC 1	IC	PA4023B
IC 2	IC	PA4024A
Q 1	Transistor	2SC2412K
Q 2	Transistor	DTC124EU
Q 3	FET	3SK263
Q 31	Transistor	2SC2412K
Q 201	FET	2SK932
Q 202	Transistor	2SC2412K
Q 203	Transistor	DTC124EU
D 1	Diode	RD39JS

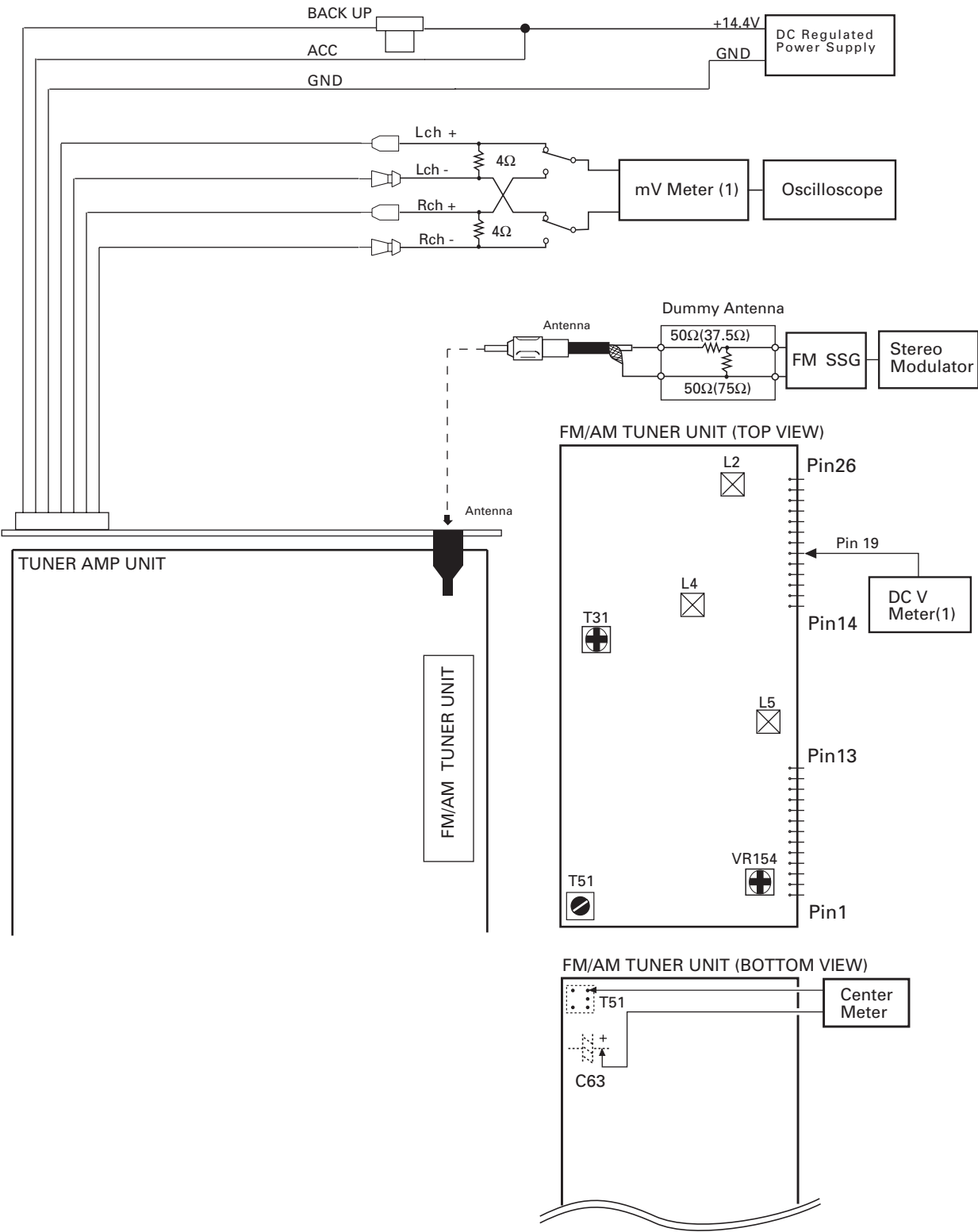
====Circuit Symbol and No.==Part Name			Part No.	====Circuit Symbol and No.==Part Name			Part No.
D	2	Diode	RD39JS	R	163		RS1/16S223J
D	4	Diode	1SV250	R	202		RS1/16S223J
D	5	Diode	KV1410-F1	R	203		RS1/16S225J
D	6	Diode	MA157	R	204		RS1/16S103J
D	7	Diode	KV1410-F1	R	206		RS1/16S220J
D	8	Diode	KV1410-F1	R	207		RS1/16S101J
D	201	Diode	MA157	R	208		RS1/16S102J
D	202	Diode	MA157	R	209		RS1/16S471J
D	231	Diode	SVC253	R	214		RS1/16S822J
L	2	Coil	CTC1133	R	215		RS1/16S822J
L	3	Inductor	LCTB2R2K2125	R	217		RS1/16S102J
L	4	Coil	CTC1133	R	231		RS1/16S272J
L	5	Coil	CTC1132	R	232		RS1/16S473J
L	51	Ferri-Inductor	LAU150K	R	237		RS1/16S103J
L	201	Ferri-Inductor	LAU4R7K	R	238		RS1/16S104J
L	202	Ferri-Inductor	LAU330K	R	239		RS1/16S104J
L	203	Inductor	CTF1287	R	240		RS1/16S332J
L	208	Inductor	LAU121K	R	241		RS1/16S202J
L	231	Inductor	LCTA3R3J3225	R	243		RS1/16S183J
T	31	Coil	CTE1117	R	244		RS1/16S392J
T	51	Coil	CTC1159	R	247		RS1/16S123J
CF	51	Ceramic Filter	CTF1441	CAPACITORS			
CF	52	Ceramic Filter	CTF1441				
CF	53	Ceramic Filter	CTF1441				
CF	232	Ceramic Filter	CTF1348				
X	151	Radiator 918.5Hz	CSS1365				
X	231	Crystal Resonator 10.26MHz	CSS1111	C	1		CCSQCH6R0D50
VR	154	Semi-fixed 150kΩ(B)	CCP1213	C	2		CCSRCK2R0C50
RESISTORS				C	4		CCSRCH820J50
				C	6		CCSRCH820J50
				C	8		CKSRYB103K25
				C	9		CKSQYB104K16
				C	10		CCSRCKR50C50
R	1		RS1/16S225J	C	11		CEJA1R0M50
R	2		RS1/16S225J	C	12		CKSRYB222K50
R	4		RS1/16S154J	C	13		CKSRYB222K50
R	5		RS1/16S391J				
R	6		RS1/16S223J				
R	7		RS1/16S123J				
R	8		RS1/16S332J				
R	9		RS1/16S473J				
R	10		RS1/16S223J	C	14		CCSRCH220J50
R	11		RS1/16S124J	C	15		CCSRCH6R0D50
R	13		RS1/16S563J	C	16		CCSRCH8R0D50
R	15		RS1/16S271J	C	17		CKSRYB222K50
R	16		RS1/16S104J	C	18		CKSRYB103K25
R	17		RS1/16S332J				
R	18		RS1/16S332J				
R	31		RS1/16S470J				
R	32		RS1/16S822J				
R	33		RS1/16S822J				
R	34		RS1/16S331J	C	19		CKSRYB222K50
R	35		RS1/16S331J	C	20		CKSRYB222K50
R	51		RS1/16S271J	C	21		CEJA100M16
R	52		RS1/16S560J	C	22		CCSRTH9R0D50
R	55		RS1/16S102J	C	23		CCSRTH120J50
R	56		RS1/16S823J				
R	61		RS1/16S392J				
R	62		RS1/16S273J				
R	101		RS1/16S272J				
R	102		RS1/16S682J	C	24		CCSRCH471J50
R	103		RS1/16S333J	C	25		CKSRYB103K25
R	104		RS1/16S334J	C	26		CCSRCH101J50
R	105		RS1/16S683J	C	31		CKSRYB103K25
R	107		RS1/16S222J	C	32		CKSQYB472K50
R	151		RS1/16S222J				
R	152		RS1/16S393J				
R	155		RS1/16S273J				
R	156		RS1/16S243J				
R	157		RS1/16S203J	C	33		CCSRCH5R0C50
R	160		RS1/16S222J	C	34		CKSQYB104K16
R	161		RS1/16S563J	C	36		CCSRRH201J50
R	162		RS1/16S105J	C	51		CKSRYB223K25
				C	52		CKSRYB103K25
				C	54		CCSRCH470J50
				C	55		CKSQYB223K25
				C	56		CKSQYB104K16
				C	57		CKSRYB472K50
				C	58		CEJA330M10
				C	59		CKSRYB103K25
				C	60		CKSRYB102K50
				C	61		CCSRCH270J50
				C	62		CKSRYB103K25
				C	63		CEJAR22M50
				C	101		CEJANP100M10
				C	102		CKSRYB182K50
				C	103		CKSRYB682K25
				C	104		CEJA2R2M50
				C	105		CKSRYB103K25

====Circuit Symbol and No.====	Part Name	Part No.	====Circuit Symbol and No.====	Part Name	Part No.
C 106		CCSRCH151J50	D 8	Diode	KV1410-F1
C 107		CKSRYB103K25	D 201	Diode	MA157
C 151		CKSRYB472K50	D 202	Diode	MA157
C 152		CKSQYB104K16	D 231	Diode	SVC253
C 153		CEJA3R3M50	L 2	Coil	CTC1133
C 154		CKSQYB104K16	L 3	Inductor	LCTB2R2K2125
C 157		CEJA3R3M50	L 4	Coil	CTC1133
C 158		CKSYB474K16	L 5	Coil	CTC1132
C 159		CEJA220M6R3	L 6	Inductor	LCTBR15K1608
C 160		CKSQYB104K16	L 51	Ferri-Inductor	LAU150K
C 161		CKSQYB104K16	L 201	Ferri-Inductor	LAU4R7K
C 162		CEJA3R3M50	L 202	Ferri-Inductor	LAU330K
C 163		CKSRYB102K50	L 203	Inductor	CTF1287
C 170		CCSRCH100D50	L 208	Inductor	LAU121K
C 201		CCSRCH471J50	L 231	Inductor	LCTA3R3J3225
C 202		CCSRCH100D50	T 31	Coil	CTE1117
C 203		CKSRYB332K50	T 51	Coil	CTC1159
C 204		CKSQYB473K16	CF 51	Ceramic Filter	CTF1441
C 205		CKSQYB473K16	CF 52	Ceramic Filter	CTF1441
C 206		CKSQYB104K16	CF 53	Ceramic Filter	CTF1441
C 207		CCSRCH560J50	CF 232	Ceramic Filter	CTF1348
C 209		CKSQYB104K16	X 151	Radiator 918.5Hz	CSS1365
C 211		CCSRCH101J50	X 231	Crystal Resonator 10.26MHz	CSS1111
C 212		CEJA470M6R3	VR 154	Semi-fixed 150kΩ(B)	CCP1213
C 213		CKSRYB103K25			
C 216		CCSRCH101J50		RESISTORS	
C 217		CEJA1R5M50	R 1		RS1/16S225J
C 219		CCSRCH471J50	R 2		RS1/16S225J
C 220		CKSRYB103K25	R 4		RS1/16S154J
C 230		CKSRYB103K25	R 5		RS1/16S391J
C 231		CCSRCH330J50	R 6		RS1/16S223J
C 232		CCSRCH150J50	R 7		RS1/16S123J
C 233		CKSQYB104K16	R 8		RS1/16S332J
C 234		CEJA330M10	R 9		RS1/16S473J
C 235		CKSRYB332K50	R 10		RS1/16S223J
C 236		CKSQYB473K16	R 11		RS1/16S124J
C 237		CCSRCH120J50	R 13		RS1/16S563J
C 239		CKSRYB472K50	R 15		RS1/16S271J
C 240		CEJAR47M50	R 16		RS1/16S104J
C 241		CKSQYB104K16	R 17		RS1/16S332J
C 242		CEJAR47M50	R 18		RS1/16S332J
C 243		CEJAR33M50	R 31		RS1/16S470J
C 244		CKSQYB473K16	R 32		RS1/16S822J
C 245		CKSRYB333K16	R 33		RS1/16S822J
C 246		CKSQYB473K16	R 34		RS1/16S331J
C 250		CCSRCH471J50	R 35		RS1/16S331J
			R 51		RS1/16S271J
			R 52		RS1/16S560J
			R 55		RS1/16S102J
			R 56		RS1/16S823J
			R 61		RS1/16S392J
IC 1	IC	PA4023B	R 62		RS1/16S273J
IC 2	IC	PA4024A	R 101		RS1/16S272J
Q 1	Transistor	2SC2412K	R 102		RS1/16S682J
Q 2	Transistor	DTC124EU	R 103		RS1/16S333J
Q 3	FET	3SK263	R 104		RS1/16S334J
Q 31	Transistor	2SC2412K	R 105		RS1/16S683J
Q 201	FET	2SK932	R 107		RS1/16S222J
Q 202	Transistor	2SC2412K	R 151		RS1/16S222J
Q 203	Transistor	DTC124EU	R 152		RS1/16S393J
D 1	Diode	RD39JS	R 155		RS1/16S273J

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
R 163	RS1/16S223J	C 107	CKSRYB103K25
R 202	RS1/16S223J	C 151	CKSRYB472K50
R 203	RS1/16S225J	C 152	CKSQYB104K16
R 204	RS1/16S103J	C 153	CEJA3R3M50
R 206	RS1/16S220J	C 154	CKSQYB104K16
R 207	RS1/16S101J	C 157	CEJA3R3M50
R 208	RS1/16S102J	C 158	CKSYB474K16
R 209	RS1/16S471J	C 159	CEJA220M6R3
R 214	RS1/16S822J	C 160	CKSQYB104K16
R 215	RS1/16S822J	C 161	CKSQYB104K16
R 217	RS1/16S102J	C 162	CEJA3R3M50
R 231	RS1/16S272J	C 163	CKSRYB102K50
R 232	RS1/16S473J	C 170	CCSRCH100D50
R 237	RS1/16S103J	C 201	CCSRCH471J50
R 238	RS1/16S104J	C 202	CCSRCH100D50
R 239	RS1/16S104J	C 203	CKSRYB332K50
R 240	RS1/16S332J	C 204	CKSQYB473K16
R 241	RS1/16S202J	C 205	CKSQYB473K16
R 243	RS1/16S183J	C 206	CKSQYB104K16
R 244	RS1/16S392J	C 207	CCSRCH560J50
R 247	RS1/16S123J	C 209	CKSQYB104K16
CAPACITORS		C 211	CCSRCH101J50
C 1	CCSQCH6R0D50	C 212	CEJA470M6R3
C 2	CCSRCK2R0C50	C 213	CKSRYB103K25
C 4	CCSRCH820J50	C 216	CCSRCH101J50
C 6	CCSRCH820J50	C 217	CEJA1R5M50
C 8	CKSRYB103K25	C 219	CCSRCH471J50
C 9	CKSQYB104K16	C 220	CKSRYB103K25
C 10	CCSRCKR50C50	C 230	CKSRYB103K25
C 11	CEJA1R0M50	C 231	CCSRCH330J50
C 12	CKSRYB222K50	C 232	CCSRCH150J50
C 13	CKSRYB222K50	C 233	CKSQYB104K16
C 14	CCSRCH220J50	C 234	CEJA330M10
C 15	CCSRCH6R0D50	C 235	CKSRYB332K50
C 16	CCSRCH8R0D50	C 236	CKSQYB473K16
C 17	CKSRYB222K50	C 237	CCSRCH120J50
C 18	CKSRYB103K25	C 239	CKSRYB472K50
C 19	CKSRYB222K50	C 240	CEJAR47M50
C 20	CKSRYB222K50	C 241	CKSQYB104K16
C 21	CEJA100M16	C 242	CEJAR47M50
C 22	CCSRTH9R0D50	C 243	CEJAR33M50
C 23	CCSRTH120J50	C 244	CKSQYB473K16
C 24	CCSRCH471J50	C 245	CKSRYB333K16
C 25	CKSRYB103K25	C 246	CKSQYB473K16
C 31	CKSRYB103K25	C 250	CCSRCH471J50
C 32	CKSQYB472K50		
C 33	CCSRCH5R0C50		
C 34	CKSQYB104K16		
C 36	CCSRRH201J50		
C 51	CKSRYB223K25		
C 52	CKSRYB103K25		
C 54	CCSRCH470J50		
C 55	CKSQYB223K25		
C 56	CKSQYB104K16		
C 57	CKSRYB472K50		
C 58	CEJA330M10		
C 59	CKSRYB103K25		
C 60	CKSRYB102K50		
C 61	CCSRCH270J50		
C 62	CKSRYB103K25		
C 63	CEJAR22M50		
C 101	CEJANP100M10		
C 102	CKSRYB182K50		
C 103	CKSRYB682K25		
C 104	CEJA2R2M50		
C 105	CKSRYB103K25		
C 106	CCSRCH151J50		
		D Unit Number :	
		Unit Name : Cassette PCB	
		S 1 Switch(Load)	ESN1016
		S 2 Switch(Mute)	ESN1017
		S 3 Switch(FWD/REV)	ESH1006
		S 4 Switch(Eject)	ESG1006
		R 1	RD1/4HM472J
		Miscellaneous Parts List	
		M 1 Motor Unit	EXA1467
		HD 1 Head Assy	EXA1466
		FU 951 Fuse 10A	CEK1136

6. ADJUSTMENT

● Connection Diagram



FM ADJUSTMENT

Modulation M:MONO MOD., 400Hz 30%(22.5kHz Dev.) or 400Hz 100%(75kHz Dev.)

S:STEREO MOD., 1kHz, L or R=30%(20.25kHz+7.5kHz Dev.)

NOTE:Before proceeding to further adjustments after switching power ON, let the tuner run for ten minutes to allow the circuits to stabilize.

FM ADJUSTMENT(UC MODEL)

	No.	FM SSG		Displayed Frequency(MHz)	Adjustment Point	Adjustment Method (Switch Position)
		Frequency(MHz)	Level(dBf)			
TUN Volt	1	.....	.....	107.9	L5	DC V Meter(1) : 6V
IF	2	98.1 M	60—100	98.1	T51	Center Meter : 0
ANT Coil	3	98.1 M	5	98.1	L2	mV Meter(1) : Maximum
RF Coil	4	98.1 M	5	98.1	L4	mV Meter(1) : Maximum
IFT	5	98.1 M	5	98.1	T31	mV Meter(1) : Maximum (STEREO MODE)
ARC	6	98.1 S	40	98.1	VR154	mV Meter(1) : Separation 5dB (STEREO MODE)

FM ADJUSTMENT(ES MODEL)

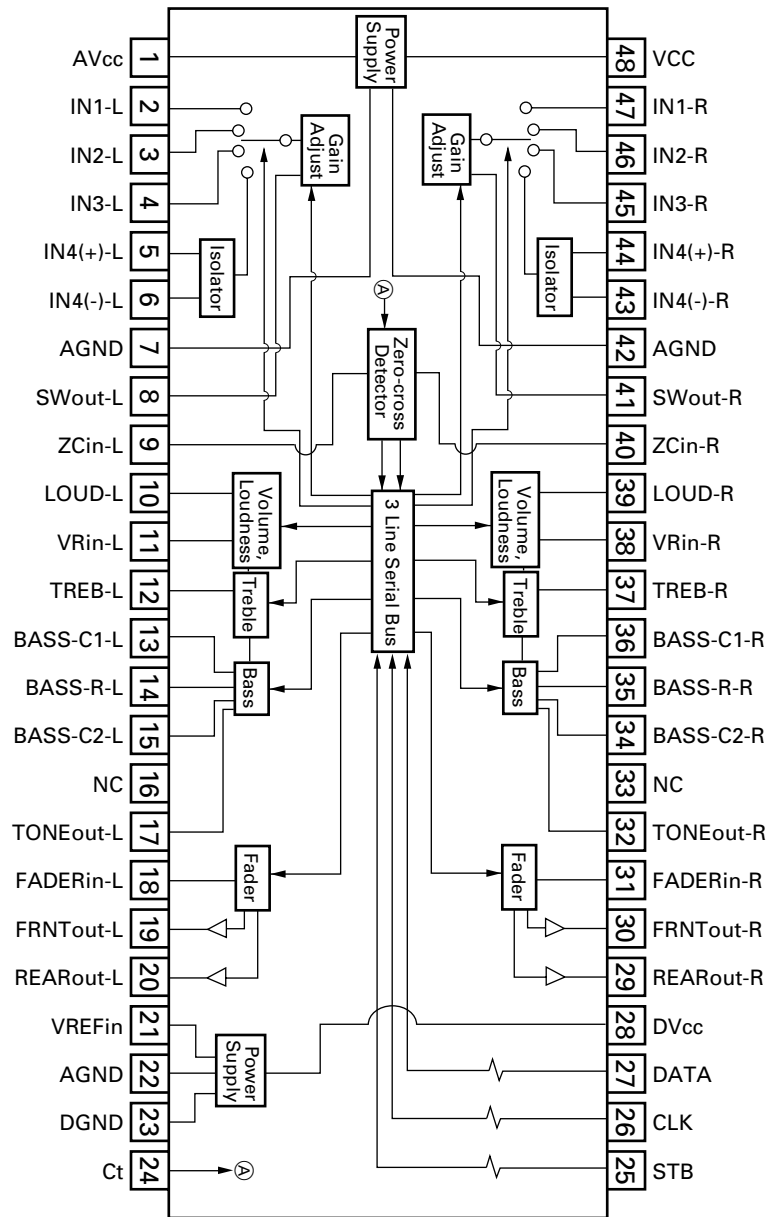
	No.	FM SSG		Displayed Frequency(MHz)	Adjustment Point	Adjustment Method (Switch Position)
		Frequency(MHz)	Level(dBf)			
TUN Volt	1	.....	.....	108.0	L5	DC V Meter(1) : 6V
IF	2	98.1 M	60—100	98.1	T51	Center Meter : 0
ANT Coil	3	98.1 M	5	98.1	L2	mV Meter(1) : Maximum
RF Coil	4	98.1 M	5	98.1	L4	mV Meter(1) : Maximum
IFT	5	98.1 M	5	98.1	T31	mV Meter(1) : Maximum (STEREO MODE)
ARC	6	98.1 S	40	98.1	VR154	mV Meter(1) : Separation 5dB (STEREO MODE)

7. GENERAL INFORMATION

7.1 PARTS

7.1.1 IC

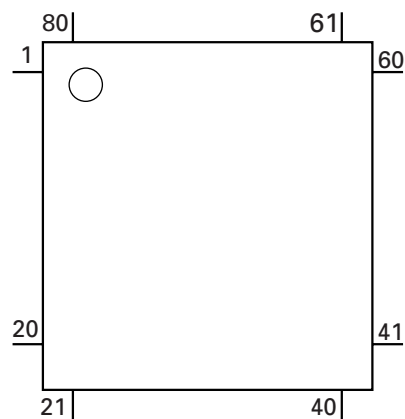
SN761029DL



● Pin Functions(PE5015A)

Pin No.	Pin Name	I/O	Format	Function and Operation
1,2	NC			Not used
3	ADPW			A/D converter power
4	GND			GND
5,6	NC			Not used
7	AVREF1			(Connect to VDD)
8	KYDT	I		Key data input
9	DPDT	O	C	Display data output
10	DSNS	I		Grille detach sense input
11	TUNPDI	I		PLL IC data input
12	TUNPDO	O	C	PLL IC data output
13	TUNPCK	O	C	PLL IC clock output
14	TUNPCE	O	C	PLL IC chip enable output
15,16	NC			Not used
17	TX	O	C	IP BUS data output
18-21	NC			Not used
22	SWVDD	O	C	Grille power supply control output
23	NC			Not used
24	VDI	O	C	Data output for electronic volume
25	VCK	O	C	Clock output for electronic volume
26	VST	O	C	Strobe pulse output for electronic volume
27	SYSPW	O	C	System power supply control output
28	MUTE	O	C	System mute output
29	DMINH	O	C	Mechanism mute cancel output
30-32	NC			Not used
33	GND			GND
34-37	NC			Not used
38	FM	O	C	FM power control output
39	AM	O	C	AM power control output
40	ASENBO	O	C	Slave power supply control output
41-49	NC			Not used
50	EJECT	I		Eject key input
51	TAPLD	I		Tape loading input
52	MECPW	O	C	Cassette mechanism power output
53	MCMUT	I		Mechanism mute input
54	NOR/REV	I		Normal reverse input
55-59	NC			Not used
60	RESET	I		Reset input
61	RX	I		IP BUS data input
62	NC			Not used
63	CLKIN	I		Clock input
64	ASENS	I		ACC power sense input
65	BSNS	I		Back up power sense input
66	SD	I		SD input
67	ST	I		FM stereo input
68	VDD			Power supply
69	X2			Oscillator output
70	X1			Oscillator input
71	GND			GND
72	NC			Not used
73	TESTIN	I		Test program mode input
74	AVDD			A/D converter analog power supply (VDD)
75	AVREF0			(A/D converter standard voltage input)
76	SL	I		Signal level input
77	MODEL	I		Model select input
78-80	NC			Not used

*PE5015A



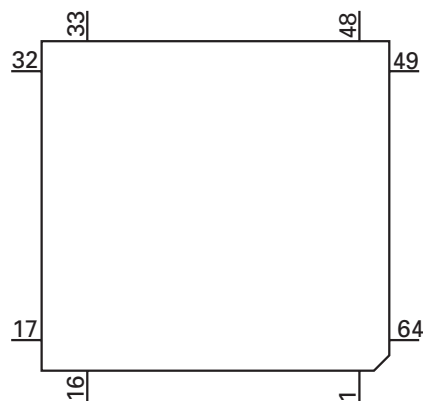
Format	Meaning
C	C MOS

IC's marked by* are MOS type.
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

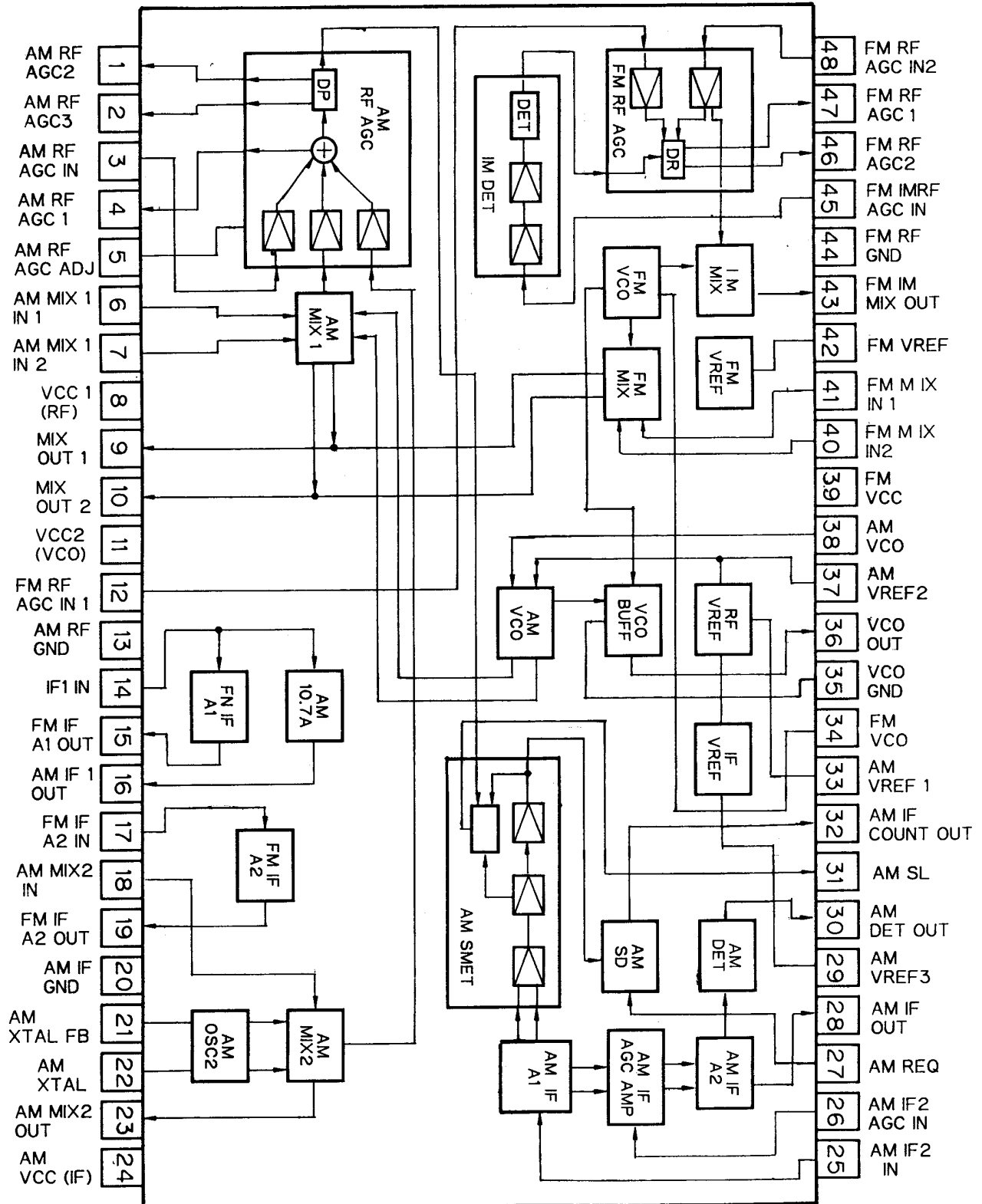
● Pin Functions (PD6293A)

Pin No.	Pin Name	I/O	Function and Operation
1-5	SEG4-0	O	LCD segment output 4-0
6-8	COM1-3	O	Common driver output 1-3
9	COM0	O	Common driver output 0
10	LCDB		LCD bias power supply
11-14	KS3-0	O	Key strobe output 3-0
15,16	KDT0,1	I	Key data input 0,1
17	REM	I	Remote control reception
18	DPDT	I	Display data input
19	NC		Not used
20	KYDT	O	Key data output
21	MODA		GND
22	X0		Crystal oscillator connection pin
23	X1		Crystal oscillator connection pin
24	VSS		GND
25,26	KDT2,3	I	Key data input 2,3
27,28	KST5,4	O	Key strobe output 5,4
29-55	SEG39-13	O	LCD segment output 39-13
56	VCC		5V
57-64	SEG12-5	O	LCD segment output 12-5

*PD6293A



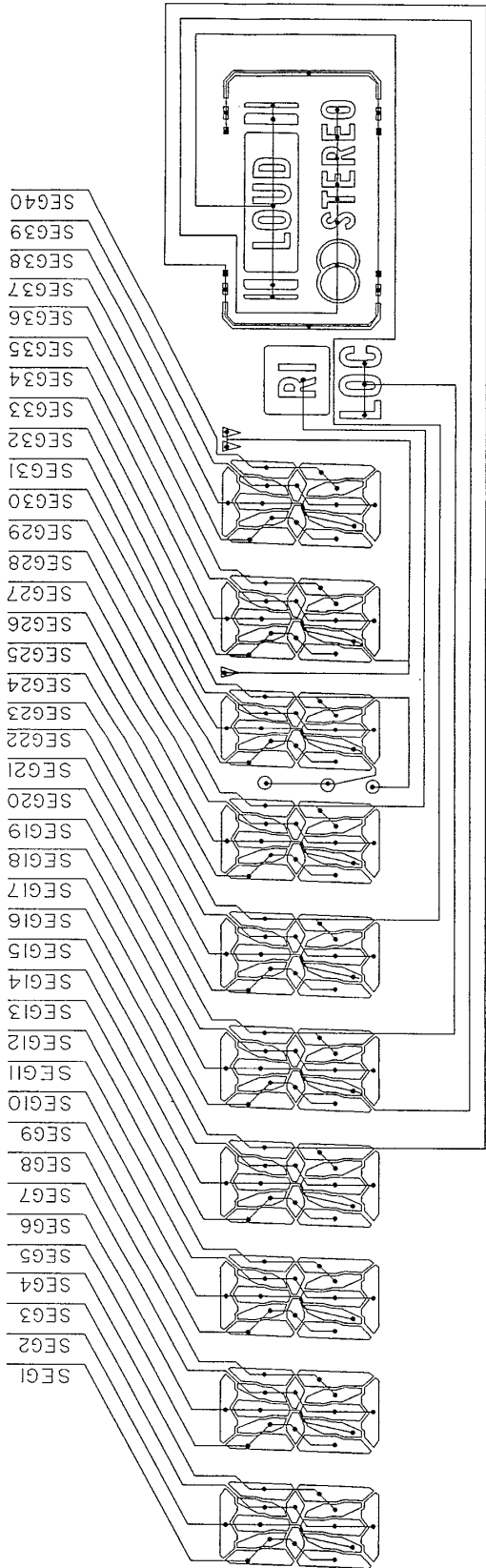
PA4023B



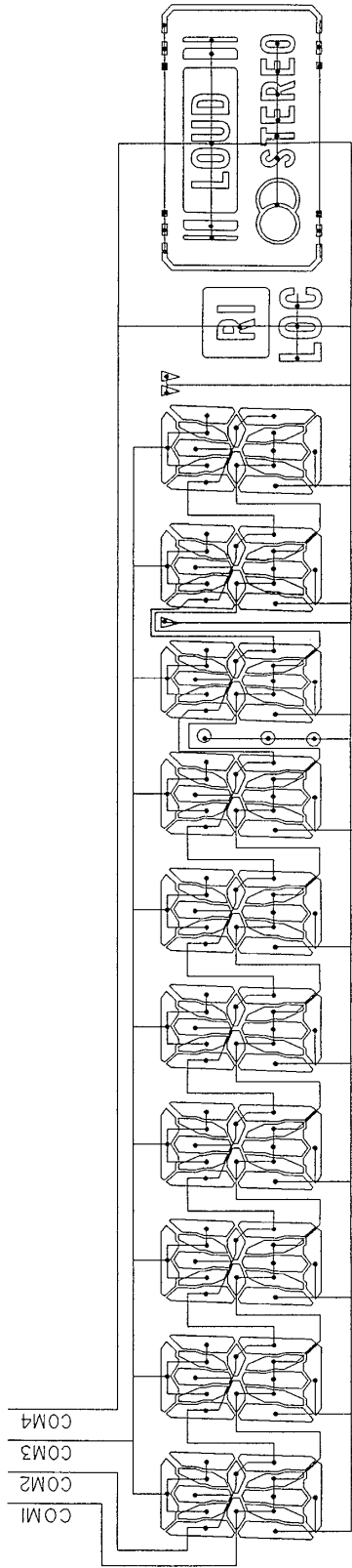
SEGMENT

7.1.2 DISPLAY

● CAW1513



COMMON



7.2 DISASSEMBLY

● Removing the Case(not shown)

1.Remove the three screws.

2.Remove the Case.

● Removing the Cassette Mechanism Assy (not shown)

1.Remove the four screws.

2.Disconnect the connector, and then removing the Cassette Mechanism Assy.

● Removing the Panel Unit(Fig.1)

1 Disengage the stopper at two locations indicated

2 Remove the Panel Unit.

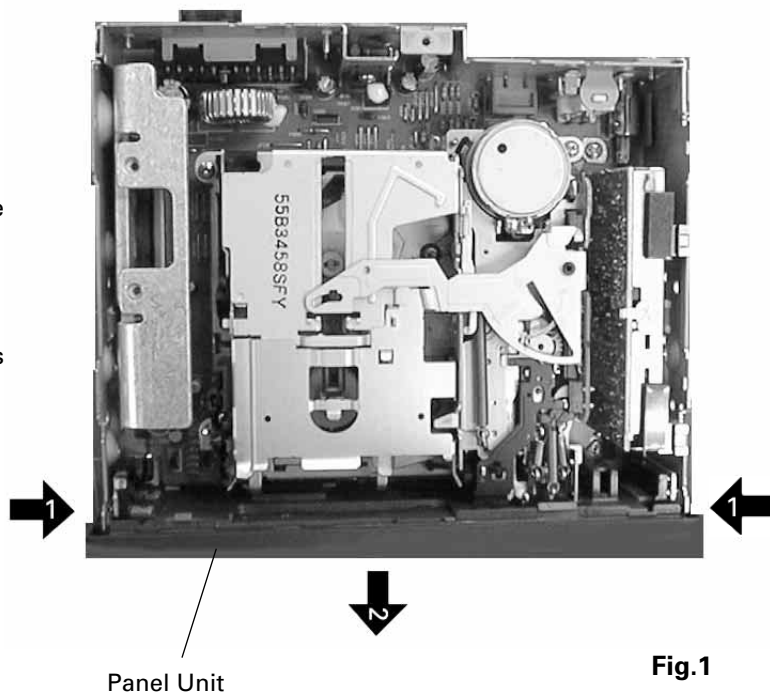


Fig.1

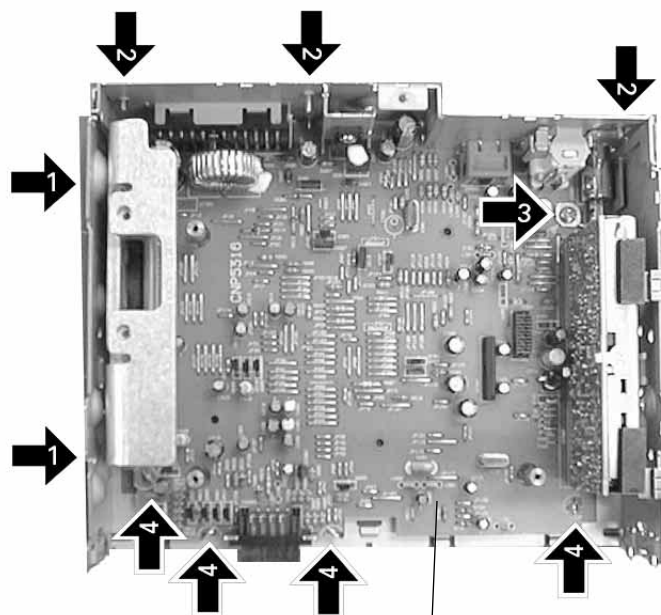
● Removing the Tuner Amp Unit(Fig.2)

1 Removing the two screws.

2 Removing the three screws.

3 Removing the screw.

4 Unbend the tabs at four locations indicated by arrow until straight.
Remove the Tuner Amp Unit.



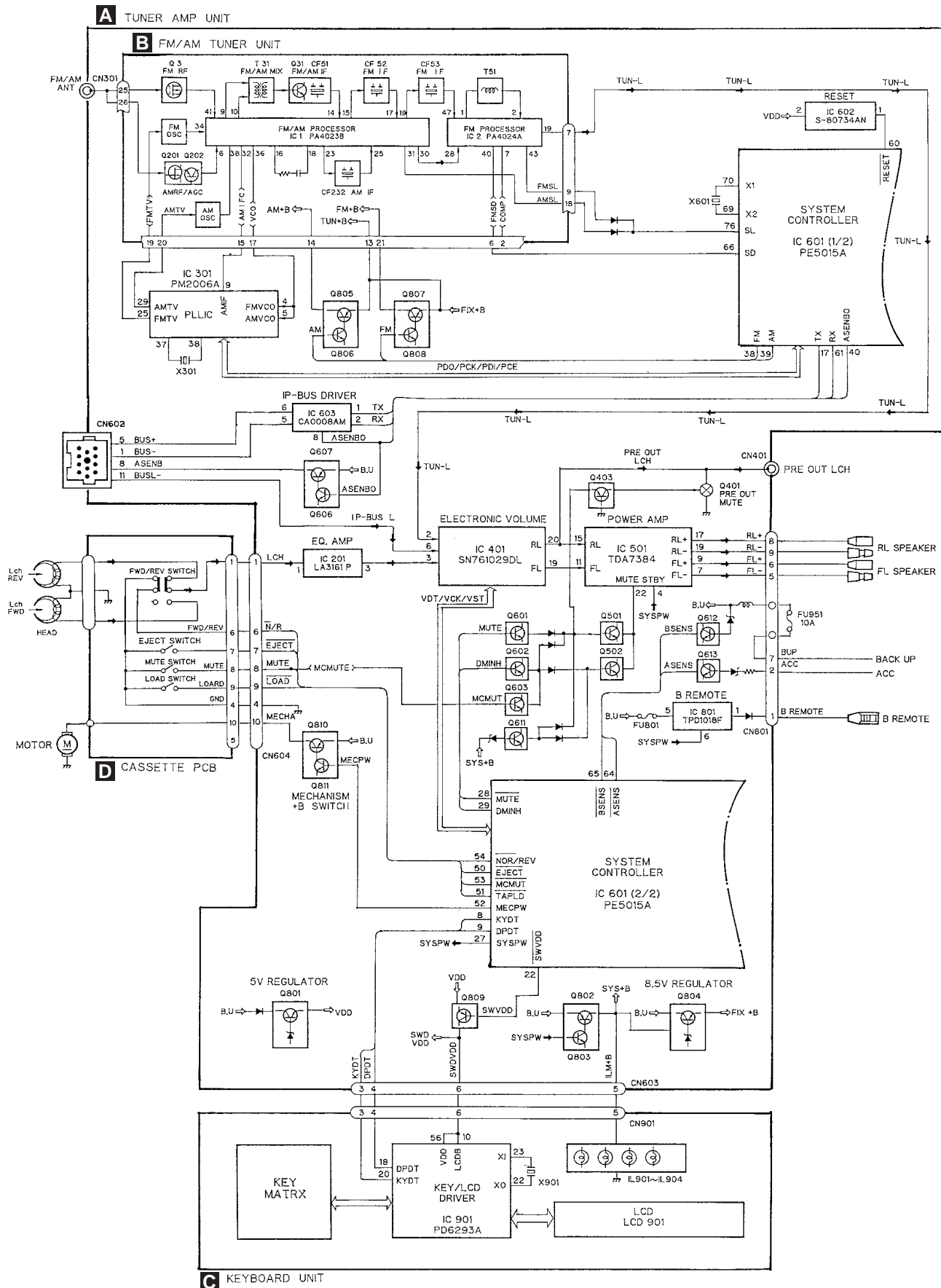
Tuner Amp Unit

Fig.2

7.3 EXPLANATION

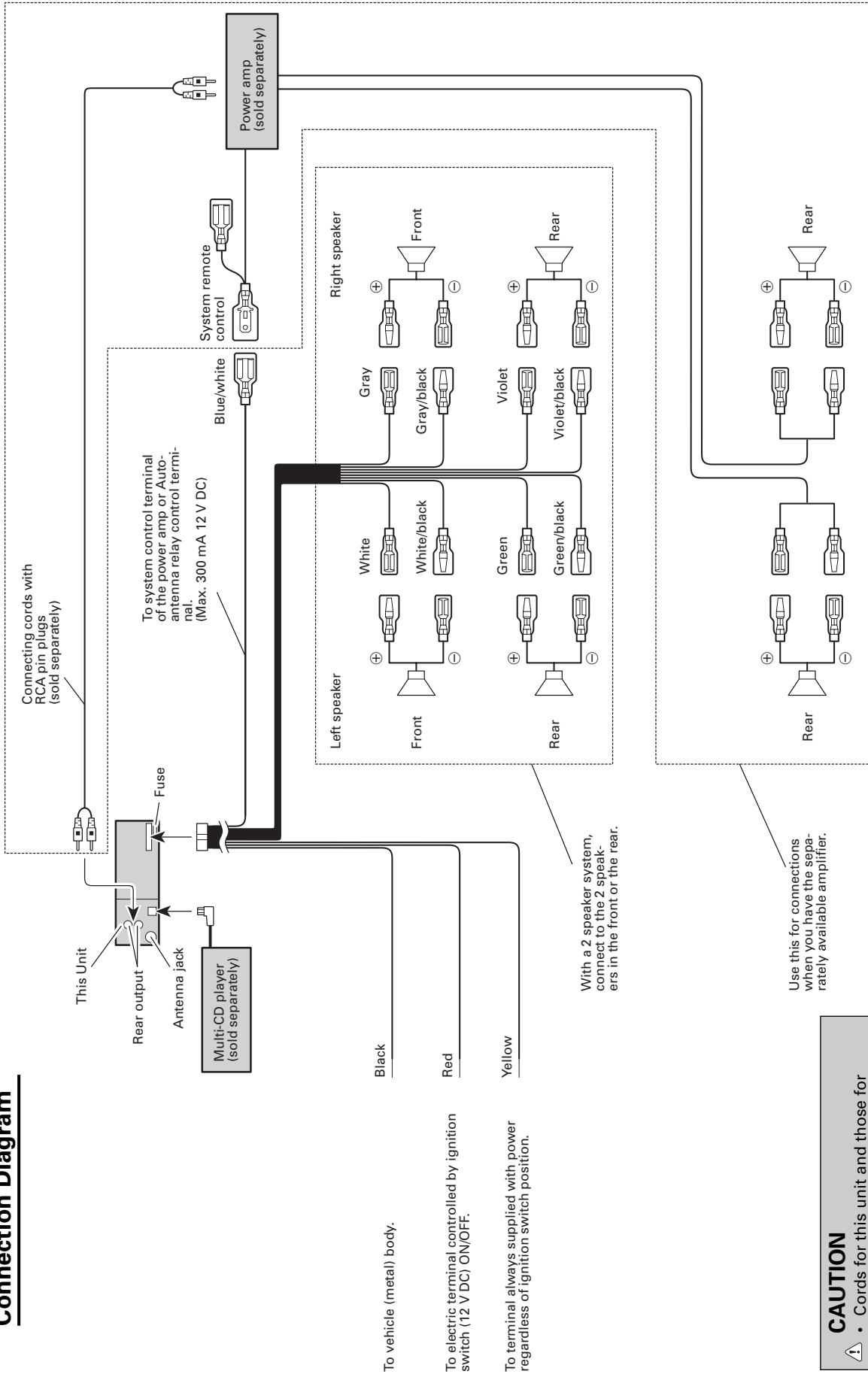
7.3.1 BLOCK DIAGRAM

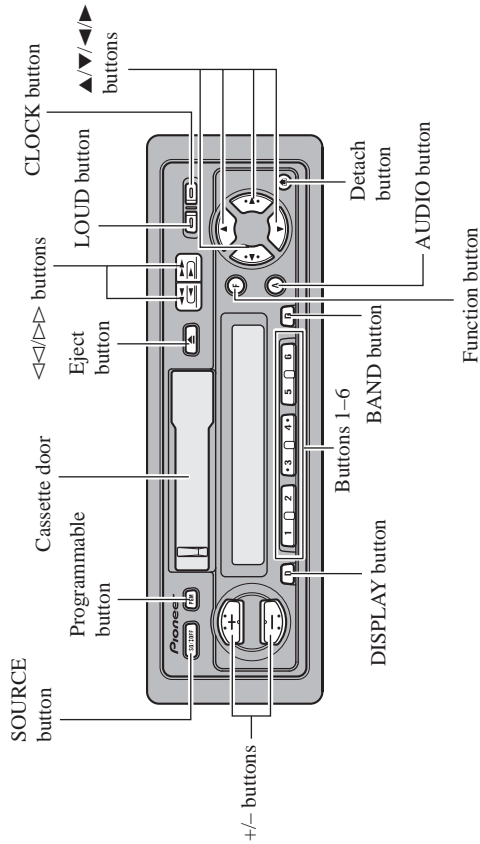
● KEH-P2800/X1M/UC



8. OPERATIONS AND SPECIFICATIONS

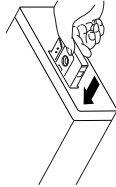
Connection Diagram



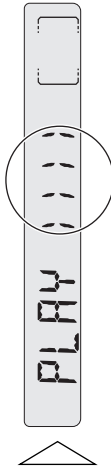


Basic Operation of Cassette Player

1. Insert the cassette tape.

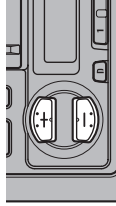


2. Switch tape playback from side A to side B, or vice versa.

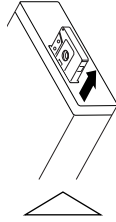
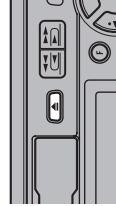


Same Time

3. Raise or lower the volume.



4. Remove the cassette tape.



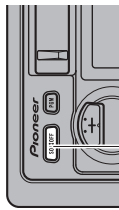
Note:

- The Tape function can be turned ON/OFF with the cassette tape remaining in this product.

Tuner Operation

Basic Operation of Tuner

1. Select Tuner.

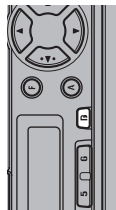


Each press changes the Source ...

Frequency appears on the display. ("STEREO" indicator lights when a stereo station is selected.)

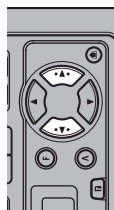


2. Select the desired band.



F1 → FII → FIII → AM

3. Tune the receiver to a higher or lower frequency.



This product's tuner lets you select the tuning by changing the length of the time you press the button.

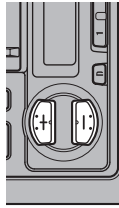
Manual Tuning (step by step)	0.3 seconds or less
Seek Tuning	0.3 – 2 seconds
Manual Tuning (continuously)	2 seconds or more

Note:

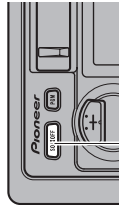
- To select a weak broadcasting station that cannot be tuned in with the Seek Tuning function, tune in with Manual Tuning.

Tuner Operation

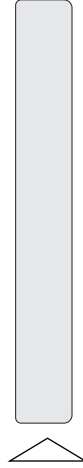
4. Raise or lower the volume.



5. Turn the source OFF.



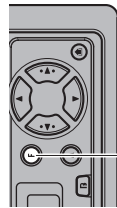
Hold for 1 second



Entering the Function Menu

In this menu you can select tuner functions.

- Select the desired mode in **Function Menu**.



Each press changes the Mode ...

Each press of the Function button selects the mode in the following order:
BSM → LOCAL

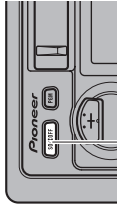
Note:

- You can cancel the Function Menu by pressing the BAND button.
- After selecting the Function Menu, if you do not perform an operation within about 30 seconds, the Function Menu is automatically canceled.

This product can control a CD player (one disc only).

Basic Operation of CD Player

1. Select the CD player source.



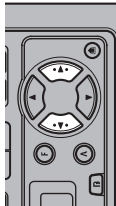
Each press changes the Source ...



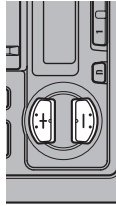
Note:

- The CD player is selected only when a CD is loaded.
- If the CD player cannot operate properly, an error message such as "ERROR 14" is displayed. Refer to the CD player owner's manual.

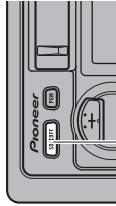
2. Reverse or advance track by track.



3. Raise or lower the volume.



4. Turn the source OFF.



Hold for 1 second



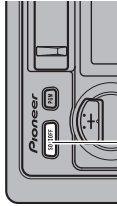
Track Search and Fast-forward/Reverse

Besides Track Search convenience when searching for a desired track, this unit also lets you fast-forward and reverse through tracks to find a desired phrase or section of music.

This product can control one or more multi-CD players.

Basic Operation of Multi-CD Players

1. Select the multi-CD player source.



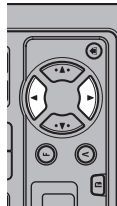
Each press changes the Source ...



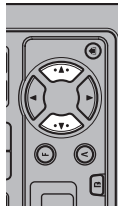
Note:

- The multi-CD player may perform a preparatory operation, such as verifying the presence of a disc or reading disc information, when the power is turned ON or a new disc is selected for playback. "READY" is displayed.
- If the multi-CD player cannot operate properly, an error message such as "ERROR 14" is displayed. Refer to the multi-CD player owner's manual.

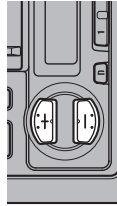
2. Select the desired disc.



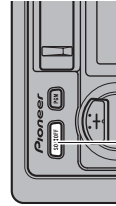
3. Reverse or advance track by track.



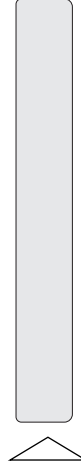
4. Raise or lower the volume.



5. Turn the source OFF.



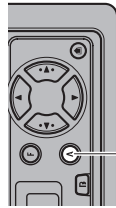
Hold for 1 second



Audio Adjustment

Selecting the Mode

- Select the mode you want to adjust.



Each press changes the Mode ...

Each press of the AUDIO button selects the mode in the following order:

Fader/Balance → Bass → Treble → Loudness

When audio modes are selected for adjustment, the setting returns to the normal display after 30 seconds.

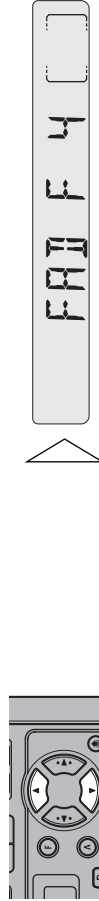
Balance Adjustment

This function allows you to select a Fader/Balance setting that provides ideal listening conditions in all occupied seats.

1. Select the Fader/Balance mode.

After adjustment use the BAND button to return to the normal display.

2. Shift the balance progressively to the front or rear speakers.

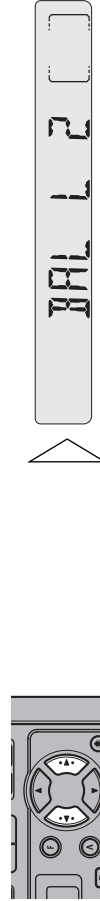


"FAD F15" – "FAD R15" is displayed as it moves from front to rear.

Note:

- "FAD 00" is the proper setting when 2 speakers are in use.

3. Shift the balance to the left or right speaker, respectively.



"BAL L9" – "BAL R9" is displayed as it moves from left to right.

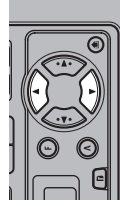
Bass/Treble Adjustment

This product is equipped with two tone adjustment modes, the Bass Adjustment and Treble Adjustment modes.

1. Select "Bass Adjustment mode" or "Treble Adjustment mode".

After adjustment use the BAND button to return to the normal display.

2. Increase or decrease the intensity of the bass or treble, whichever is selected.



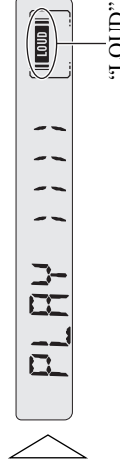
The display shows "+6" – "–6".

3. Repeat steps 1 – 2 above for the other Bass or Treble Adjustment mode.

Loudness Adjustment

The Loudness function compensates for deficiencies in the low and high sound ranges at low volume.

- Switch the Loudness function ON or OFF.



Note:

- You can also switch the Loudness function ON/OFF in the Audio Adjustment Menu.

General

Power source	14.4 V DC (10.8 – 15.1 V allowable)
Grounding system	Negative type
Max. current consumption	8.5 A
Dimensions	
(DIN) (chassis)	178 (W) × 50 (H) × 150 (D) mm
[7 (W) × 2 (H) × 5-7/8 (D) in.]	
(nose)	188 (W) × 58 (H) × 19 (D) mm
[7-3/8 (W) × 2-1/4 (H) × 3/4 (D) in.]	
(D) (chassis)	178 (W) × 50 (H) × 155 (D) mm
[7 (W) × 2 (H) × 6-1/8 (D) in.]	
(nose)	170 (W) × 48 (H) × 14 (D) mm
[6-3/4 (W) × 1-7/8 (H) × 1/2 (D) in.]	
Weight	1.2 kg (2.6 lbs)

Amplifier

Continuous power output is 17 W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.

Maximum power output	40 W × 4
Load impedance	4 Ω (4 – 8 Ω allowable)
Preout maximum output level/output impedance	2.2 V/1 kΩ

Tone controls

(Bass)	±12 dB (100 Hz)
(Treble)	±12 dB (10 kHz)
Loudness contour	+10 dB (100 Hz), +7 dB (10 kHz) (volume: –30 dB)

Cassette player

Tape	Compact cassette tape (C-30 – C-90)
Tape speed	4.76 cm/sec. (+0.14 cm/sec., –0.05 cm/sec.)
Fast forward/rewinding time	Approx. 90 sec. for C-60
Wow & flutter	0.13% (WRMS)
Frequency response	40 – 14,000 Hz (±3 dB)
Stereo separation	45 dB
Signal-to-noise ratio	52 dB (IHF-A network)

FM tuner

Frequency range	87.9 – 107.9 MHz
Usable sensitivity	11 dBf (1.0 μV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity	16 dBf (1.7 μV/75 Ω, mono)
Signal-to-noise ratio	70 dB (IHF-A network)
Distortion	0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response	30 – 15,000 Hz (±3 dB)
Stereo separation	40 dB (at 65 dBf, 1 kHz)
Selectivity	70 dB (2ACA)
Three-signal intermodulation (desire signal level)	30 dBf (two undesire signal level: 100 dBf)

AM tuner

Frequency range	530 – 1,710 kHz
Usable sensitivity	18 μV (S/N: 20 dB)
Selectivity	50 dB

Note:

- Specifications and the design are subject to possible modification without notice due to improvements.

General

Power source	14.4 V DC (10.8 – 15.1 V allowable)
Grounding system	Negative type
Max. current consumption	8.5 A
Dimensions	
(DIN) (chassis)	178 (W) × 50 (H) × 150 (D) mm
(nose)	188 (W) × 58 (H) × 19 (D) mm
(D) (chassis)	178 (W) × 50 (H) × 155 (D) mm
(nose)	170 (W) × 48 (H) × 14 (D) mm
Weight	1.2 kg

Amplifier

Continuous power output is 17 W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.

Maximum power output	40 W × 4
Continuous power output	17 W × 4 (1% dist. at 1 kHz)
Load impedance	4 Ω (4 – 8 Ω allowable)
Preout maximum output level/output impedance	2.2 V/1 kΩ

Tone controls

(Bass)	+ 8 – 16 dB (100 Hz)
(Treble)	±12 dB (10 kHz)
Loudness contour	+10 dB (100 Hz), +7 dB (10 kHz) (volume: –30 dB)

Cassette player

Tape	Compact cassette tape (C-30 – C-90)
Tape speed	4.76 cm/sec. (+0.14 cm/sec., –0.05 cm/sec.)
Fast forward/rewinding time	Approx. 90 sec. for C-60
Wow & flutter	0.13% (WRMS)
Frequency response	40 – 14,000 Hz (±3 dB)
Stereo separation	45 dB
Signal-to-noise ratio	52 dB (IHF-A network)

FM tuner

Frequency range	87.5 – 108 MHz
Usable sensitivity	11 dBf (1.0 μV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity	16 dBf (1.7 μV/75 Ω, mono)
Signal-to-noise ratio	70 dB (IEC-A network)
Distortion	0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response	30 – 15,000 Hz (±3 dB)
Stereo separation	40 dB (at 65 dBf, 1 kHz)

AM tuner

Frequency range	531 – 1,602 kHz (9 kHz)
Usable sensitivity	530 - 1,710 kHz (10 kHz)
Selectivity	18 μV (S/N: 20 dB)
	50 dB (±9 kHz)
	50dB (±10 kHz)

Note:

- Specifications and the design are subject to possible modification without notice due to improvements.